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Path Building in Emerging Entrepreneurial Firms: An Investigation of Networks in the Making

Juliana Iarossi

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Path Building in Emerging Entrepreneurial Firms:
An Investigation of Networks in the Making

BY

Juliana Iarossi

A Dissertation Submitted in Partial Fulfillment of the Requirements for the Degree

Of

Executive Doctorate in Business

In the Robinson College of Business

Of

Georgia State University

GEORGIA STATE UNIVERSITY
ROBINSON COLLEGE OF BUSINESS
2012

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ACCEPTANCE

This dissertation was prepared under the direction of the Juliana Iarossi Dissertation Committee. It has been approved and accepted by all members of that committee, and it has been accepted in partial fulfillment of the requirements for the degree of Executive Doctorate in Business in the J. Mack Robinson College of Business of Georgia State University.

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ABSTRACT

Path Building in Emerging Entrepreneurial Firms;
An investigation of Networks in the Making

BY

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July 24, 2012

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Underpinning economic growth is the emergence of entrepreneurial ventures with the potential to grow that boost job creation and provide new sources of products for mature companies. The critical role associated with new firms, underscores the importance of understanding how entrepreneurship unfolds. Network-based research, while leading the way to rich empirical studies provides a limited understanding of how entrepreneurial networks are built and their impact on the emergence of a new venture. Employing a multiple case study design and a perspective based on organizational path building, three young technology ventures were investigated in terms of the formation of networks around five key entrepreneurial activities defined by entrepreneurs. Rich insight into new venture emergence is presented in terms of the reciprocal relationship between specific activities enacted by entrepreneurs and the networks that form to execute those activities revealing the path building mechanisms that evolve to drive network development. The findings of this research not only contribute to theories of new venture emergence, but also offer an interesting opportunity for future research into factors that may influence the outcome of entrepreneurial ventures and provide practical insight for organizations seeking to sustain or develop an entrepreneurial path.

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1 INTRODUCTION

1.1 The Research Problem and Perspective

The critical role of entrepreneurial firms in terms of job creation (Kane, 2010) and as fuel for new ideas and products for mature companies (Stangler & Kedrosky, 2010; Tatum, 2008), coupled with the risk inherent in the formation of new firms (Reedy & Litan, 2011; Shane, 2008; Stangler & Kedrosky, 2010), underscores the need for an understanding of entrepreneurship in order to “speed the outcomes desired by enterprising individuals, firms and societies” (Busenitz et al., 2003, p. 286). Yet, despite this general recognition of the importance of entrepreneurial companies, especially innovative startups with potential for growth, the dynamics of new company formation are not well understood (Shane & Cable, 2002; Stangler & Kedrosky, 2010).

Shane and Venkataraman (2000, p. 217), in their widely cited article on the field of entrepreneurship, argue that the lack of a conceptual framework has been an obstacle to the study of this phenomenon and that “...*entrepreneurship* has become a broad label under which a hodgepodge of research is housed.” During almost a half century of research, the study of entrepreneurship has been characterized by “prolific debate” over “the merits” of research approaches (Aldrich & Martinez, 2001, p. 41) where current theories of the firm “are inadequate to inform our understanding of entrepreneurship” (Sarasvathy, 2004, p. 529) and have “almost always led either to “mixed” results...or have actually raised challenges to dominant wisdom...” (Sarasvathy & Venkataraman, 2011, p. 113). Sarasvathy and Venkataraman (2011, p. 114) recently asked the question, “What if we have been thinking about entrepreneurship the wrong way?”

An increasing body of empirical evidence supports the concept of entrepreneurship as a process of co-creating opportunities with multiple stakeholders (Sarasvathy & Venkataraman, 2011). In this context, entrepreneurship is the endogenous emergence of opportunities (Sarasvathy, 2008, p. 60) “where the firm is a mortal implement that entrepreneurs and other stakeholders can use to shape the future according to their individual and/or collective imagination...an evolving phenomenon that is contingent upon particular founders/stakeholders...” (Sarasvathy, 2004, p. 522). At the heart of this

conceptualization of entrepreneurship is an intricate web of relationships with stakeholders known as the entrepreneurial network (Larson & Starr, 1993) through which founding entrepreneurs access resources necessary to launch the new venture (Busenitz et al., 2003). Thus, this research employs a network perspective to the study of the emergence of entrepreneurial firms.

The network perspective has been a widely accepted area of inquiry in the field of entrepreneurship (Hoang & Antoncic, 2003). Although no one doubts the central role of networks in the emergence of entrepreneurial firms, findings from this stream of research remain contradictory and theoretical models abundant (Hite & Hesterly, 2001; Slotte-Kock & Coviello, 2010). And, despite the abundance in literature, Sarasvathy (2008) concedes that “[c]urrently, there is very little theoretical light to be shed on how such a network of stakeholders comes to be” (Sarasvathy, 2008, p. 8). In a recent essay that considers entrepreneurship as a method, Sarasvathy and Venkataraman (2011, p. 126), shared the following insight into the state of network-based research:

An exhaustive search of the literature turned up virtually no journal articles on details of the numerous relationships and deals that entrepreneurs routinely negotiate with a wide variety of stakeholders...over four decades of empirical work has not even scratched the surface of intersubjective interactions between entrepreneurs and their stakeholders...Almost the entirety of social networks research takes networks as mostly given and outside the control of human action, hence not a source of valuable input into developing a method of doing entrepreneurship.

This research contributes to this body of literature by providing a glimpse of what can be learned if we think about entrepreneurship in a different way. It seeks to increase the explanatory power of network-based research in two respects: (1) by studying new venture emergence as a function of many networks formed around distinct entrepreneurial activities and (2) by investigating the process of venture emergence and network building using a path building perspective.

Network-based research has largely studied the entrepreneurial network as a broad, single entity with ill-defined boundaries and has treated resource mobilization as an undifferentiated activity. Building on Feld's (1981) theory of networks as organizations of individuals around a specific focus and Fombrun's

(1982) argument for analyzing the separate networks and interrelationships among networks of a firm, I show that a deeper understanding of how entrepreneurship unfolds can be gained by disaggregating a firm's networks according to key activities of new ventures. Informed by interviews from an initial screening of 13 entrepreneurs, five key entrepreneurial activities were identified as activities around which distinct networks are built in a new venture. In taking this approach, I extend the findings of Lechner and Dowling (2003) and Lechner et al. (2006) by using the networks formed around different foci as the conduit to study the emergence of entrepreneurial firms.

Path building theories represent another body of literature that addresses the process of emergence and organizational development. Although scholars acknowledge entrepreneurship as a phenomenon of "muddled circumstances" and an "untidy reality" (Gartner & Birley, 2002, p. 394), network-based literature in entrepreneurship largely portrays the entrepreneurial process as a process that begins with conception of an idea and progresses through predictable stages (Coviello, 2006; Evald, Klyver, & Svendsen, 2006; Greve & Salaff, 2003; Hite, 1998, 2001; Hite & Hesterly, 2001; Jack, Dodd, & Anderson, 2008; Larson & Starr, 1993; Lechner et al., 2006; Pirolo & Presutti, 2010; Slotte-Kock & Coviello, 2010). As Shane (2008) concedes, "[t]he reality is much messier." Recent research is beginning to describe the emergence of entrepreneurial firms as nonlinear, recursive, participatory and iterative (Pacheco, York, Dean, & Sarasvathy, 2010) where the starting point for entrepreneurial firms differs and the activities in which they engage to build their companies vary and do not occur in a set order (Shane, 2008, loc. 1306). Indeed a growing body of empirical evidence suggests that prescriptive and deterministic theories that have dominated network-based entrepreneurship research are inconsistent with and have limited the understanding of this phenomenon (McKelvey, 2004; Ozcan & Eisenhardt, 2009b; Slotte-Kock & Coviello, 2010).

Path dependence theory, originating in the '80's to describe technology development, implies a tapering of scope, choice and action where initial decisions can lead to a narrow path of decision-making characterized by rigidity and lock-in. Sydow et al. (2009) suggest the term path dependence has become a broad label that lacks a theoretical framework with which to evaluate this phenomenon in organizations.

They bring path dependency into the organizational arena and explain the organizational path in terms of three phases of development (preformation, formation and lock-in) where the progressive narrowing of alternatives and action is the result of a self-reinforcing feedback cycle.

Pervasive in network-based entrepreneurship research, is the use of path dependence to describe the process of network development in new ventures. However, descriptions of network development as a path dependent process are inconsistent. While some researchers describe network development as path dependent in the early stages only (Hite, 2005; Hite & Hesterly, 2001), others suggest this process may be present at all stages of development (Coviello, 2006; Lechner & Dowling, 2003; Sarasvathy, 2008; Slotte-Kock & Coviello, 2010) or not until later in development or at all (Elfring & Hulsink, 2007). In addition, the term path-dependence in the network-based literature is not clearly defined or is implied to mean the opposite of “intentionally managed” and outside the control of the firm (Hite, 2005; Hite & Hesterly, 2001), refers to strong ties (Elfring & Hulsink, 2007; Greve & Salaff, 2003; Jack, 2005) or is explicitly defined as “reliant on history and chance” (Slotte-Kock & Coviello, 2010, p. 35). Whether or not the term has been misapplied or simply not thoroughly examined when applied in the context of new venture network research, I suggest the lack of a uniform conceptualization of path dependence presents an obstacle to understanding the process of network formation and new venture emergence. This study, therefore applies the model of organizational path dependence offered by Sydow et al. (2009) as a common perspective for network-based research. But clarifying the definition of the process of path dependence also requires that we identify and establish the definition for processes that are not path dependent, processes that accommodate the progressive, regressive and pluralistic nature of the entrepreneurial process.

McKelvey (2004, p. 337) argues that “[e]ntrepreneurship is about order creation” and an emerging group of scholars are calling for a greater focus on what goes on inside networks to access resources in terms of the “productive interaction” (Sarasvathy & Venkataraman, 2011, p. 126) between actors in the network that includes the “discussions, debate, and experimentation” (Garud, Kumaraswamy, & Karnoe, 2010, p. 768) that occurs in the development of new organizations. Indeed, Sydow et al. (2009, p. 705) speculate

that the emergence of paths might be explained by “creative agency” through a theory of intentional path creation and suggest further examination of the path-building process at both the network and individual level. In the context of emerging entrepreneurial ventures, the path creation perspective may offer new potential for an understanding of emerging entrepreneurial firms as ‘networks in the making’¹ (Garud et al., 2010).

Path creation shares similarities with the preformation phase of the framework described by Sydow et al. (2009) where the scope of the path is unrestricted and decisions unconstrained. However, in contrast to path dependence where paths simply occur and self-reinforcing feedback narrows the path, path creation emphasizes the entrepreneurial agency and the accumulating of inputs from a multiplicity of actors where learning from failure and feedback create opportunity and new paths. This conceptualization of organizational emergence does not imply that the path creation process is permanent and persistent throughout new venture formation. In fact, it is plausible that at some point the mechanism for organizational path building may change from path creation to path dependent mode. This, however, would challenge theoretical and empirical models that present new venture emergence as a path dependent process that becomes increasingly intentionally managed (path creation) or occurs throughout emergence.

This research adds to the understanding of how “a network of stakeholders comes to be” (Sarasvathy, 2008, p. 8) by examining the paths through which new entrepreneurial firms emerge from a collective and multi-stakeholder effort to develop new things or new ways of doing things (Schumpeter, 2008). The entrepreneur is seen here as the catalyst or instigating agent (McKelvey, 2004) who pursues and builds relationships with various actors to create networks of stakeholders that facilitate access to resources critical to the growth of a new venture. Specifically, I depart from dominant models of past research by (1) using as a conduit for research, five distinct activities identified by entrepreneurs to explore the interactions and exchanges within the networks that form around those activities and (2) employing a path

¹ I thank committee member, Lars Mathiassen, for this catchy phrase.

² Sarasvathy (2008, pp. 61-62) specifically distinguishes logic, “an internally consistent set of ideas that form a clear basis for action upon the world,” from theory, “a statement about the truth or otherwise of

building perspective to study the process of emergence of those networks.. The findings answer the following research question:

How do networks shape and how are networks shaped by the distinctive entrepreneurial activities that support the emergence of a new technology venture?

1.2 The Research Approach

In order to answer the research question a multiple case study design was conducted. The literature confirms that qualitative research and in-depth case studies are beginning to provide an understanding of “how to do entrepreneurship” (Sarasvathy & Venkataraman, 2011, p. 116) and is, therefore, the appropriate approach to address the research question.

Principles of engaged scholarship (Van De Ven, 2007) guided and shaped this research. To understand issues and challenges around new venture emergence from a stakeholder perspective, I tapped into my network of business professionals that invested in and advised young technology ventures, including venture capitalists, attorneys, CPAs and firms that provide interim executives to startup companies. These individuals also provided a gateway to technology entrepreneurs. An initial sampling of founders from 13 young technology ventures were interviewed to “discuss and explain what concepts might be used to observe this phenomenon” (Van De Ven, 2007, p. 24). The interviews helped identify five key entrepreneurial activities critical to the building of a new venture. From this initial sampling, three entrepreneurial ventures were identified for an in-depth study of the networks that form around these key entrepreneurial activities and co-develop with the new venture. Semi-structured interviews with stakeholders critical to the execution of each activity provided rich empirical data detailing the building, dismantling and reconstruction of the networks associated with each activity from the origination of relationships with interested individuals to their transformation to committed stakeholders within the network.

1.3 Overview of Dissertation Content

The details of this study will be presented as follows:

- **Chapter 2** provides a discussion of network-based literature from a structural, relational and strategic standpoint and frames the theoretical framework in terms of two path-building perspectives (path dependence and path creation) and a priori criteria developed for data analysis. Following this discussion, the opportunity for this research is presented.
- **Chapter 3** details the case study design, including criteria and justification for selection of cases, collection of data through semi-structured interviews and analysis using a path-building framework to guide coding and identification of emergent themes. Limitations of the research design are discussed.
- **Chapter 4** presents, for each case, an overview using the path building framework, followed by a discussion of the interaction between networks and the key entrepreneurial activities that occurred as the paths of the new venture were being built and the mode(s) of path building that drove network building. A cross-case analysis supports and supplements emergent themes while highlighting differences among the cases, especially as a function of the source of funding.
- **Chapter 5** offers a discussion of the contributions of this research as an example of engaged scholarship and to organizational path building literature and network-based entrepreneurship literature. Implications for future research in terms of a new model for firm emergence as well as practical applications for entrepreneurial ventures are discussed.

2 LITERATURE REVIEW AND THEORETICAL PERSPECTIVE

2.1 Network-Based Research in Entrepreneurship

At the heart of this research is the assumption that entrepreneurship involves a process of collaboration and organization to enact new things or new ways of doing things. Critical to enabling this process, however, is the mobilization of resources by the entrepreneur. While no one disputes the importance of resource mobilization to the entrepreneur, the mechanism through which a young venture extracts resources from its environment is less understood. One body of research in entrepreneurship examines the emergence of entrepreneurial firms in terms of the complex network of relationships that enable access to resources. In fact, previous research suggests the entrepreneurial venture and its networks actually co-develop (Hite & Hesterly, 2001; Larson & Starr, 1993; Slotte-Kock & Coviello, 2010). Indeed,

Johannisson (2011, p. 139) offers the following analogy: “The personal network is to the entrepreneur what the stick is to the blind (wo)man.” Therefore, an important underpinning of this research is the use of the entrepreneurial network as a relevant proxy to study emergence of the entrepreneurial firm.

2.1.1 Approaches in Network-Based Research

The network perspective originated as an important area of inquiry within the field of entrepreneurship during the 1980's (Bhagavatula, 2009; Hoang & Antoncic, 2003). This perspective asserts that the entrepreneur is embedded in complex social networks that facilitate or constrain access to resources and opportunities (Gulati, Nohria, & Zaheer, 2000; Hoang & Antoncic, 2003; Uzzi, 1996). Within this body of literature there are two distinct approaches: research that utilizes a structural approach to model the formation of networks and the emergence of entrepreneurial firms and research that employs an interactional or relational view to understand and model the entrepreneurial process.

The first approach in this body of literature seeks to describe entrepreneurial outcomes or firm performance in terms of the structural attributes and features of the network. This view of the network has its roots in the ‘strength of weak ties’ theory of Granovetter (1973) and illuminates the mechanism through which resources are exchanged in terms of the strength of relationships within the network (Granovetter, 1973), the density of the network and holes within the network (Burt, 1992), the “cohesion” and “closure” within the network (Coleman, 1988) and the intersection of cohesive networks (Vedres & Stark, 2010). This stream of research has advanced an understanding of the varied nature and patterns of relationships between actors within a network and across networks (Aarstad, Haugland, & Greve, 2010; Elfring & Hulsink, 2007; Evald et al., 2006; Fritsch & Kauffeld-Monz, 2010; Greve & Salaff, 2003; Jack, 2005; Pirolo & Presutti, 2010; Shane & Cable, 2002; Smith & Lohrke, 2008; Tang, Kacmar, & Busenitz, 2009; Vissa, 2009; Zhang, Soh, & Wong, 2010). Absent from this understanding of the variations in networks, however, is the role of agency on the part network actors. Thus, it leaves the door open for research that focuses on the interactions and exchanges within networks that contribute to the emergence of entrepreneurial firms.

In contrast, research on network actor interaction and relational embeddedness emphasizes the role that entrepreneurial action plays in network formation and the movement and management of actors within those networks (Coviello, 2006; Hite, 2005; Hite & Hesterly, 2001; Larson, 1992; Larson & Starr, 1993; Uzzi, 1996, 1997). While scholars agree this body of research is beginning to move beyond descriptions of network formation, some concede that it still “lacks a rich understanding of when, how, and why” (Slotte-Kock & Coviello, 2010, p. 48) “a network of stakeholders comes to be” (Sarasvathy, 2008, p. 8). To address these issues, a stream of research has emerged that specifically focuses on the strategic nature of network relationships and “emphasizes how firms and individuals actively shape their approach to tie formation through thoughtful agency” (Hallen & Eisenhardt, 2012, p. 36). This relational-strategic approach offers rich opportunity for exploration of network dynamics with the potential to contribute texture and context to models of entrepreneurial firm emergence.

2.1.2 Disaggregating the Entrepreneurial Network

Network-based literature is comprised of a number of competing research perspectives that may account for mixed findings and at the same time offer opportunity for further investigation into how entrepreneurial ventures and networks co-develop. While network-based research in entrepreneurship largely presents the entrepreneurial network as one entity engaged in multiple serial or concurrent activities (Hite, 2005; Jack, 2005; Larson & Starr, 1993; Sarasvathy, 2008; Slotte-Kock & Coviello, 2010), some researchers study it in terms of a specific activity, such as raising capital (Hallen & Eisenhardt, 2008, 2012; Shane & Cable, 2002); others view it in terms networks developing in firms with certain attributes (Coviello, 2006; Elfring & Hulsink, 2007; Santos & Eisenhardt, 2009).

Feld (1981, p. 2) suggests that networks are a function of organization around a specific shared focus.

A focus is defined as a social, psychological, legal, or physical entity around which joint activities are organized...As a consequence of interaction associated with their joint activities, individuals whose activities are organized around the same focus will tend to become interpersonally tied and form a cluster.

Feld (1981, p. 1) also refers to this as the “focused organization.” Through his focus model, Feld (1981, p. 10) presents the basis for an explanation of how individuals organize their relations in the context of a shared focus and suggests that individuals can “invent a focus around which to combine activities of various others” (Figure 2.1.2-1). Lechner et al. (2006), citing Fombrun (1982), depict the organizational environment as an “aggregate network” that can be viewed as “an overlapping set of networks” where “[t]he only conceptually meaningful strategy of analysis is to distinguish each network by its content, analyze it as a separate network, and look at the interrelationships among the different networks” (Fombrun, 1982, p. 280).

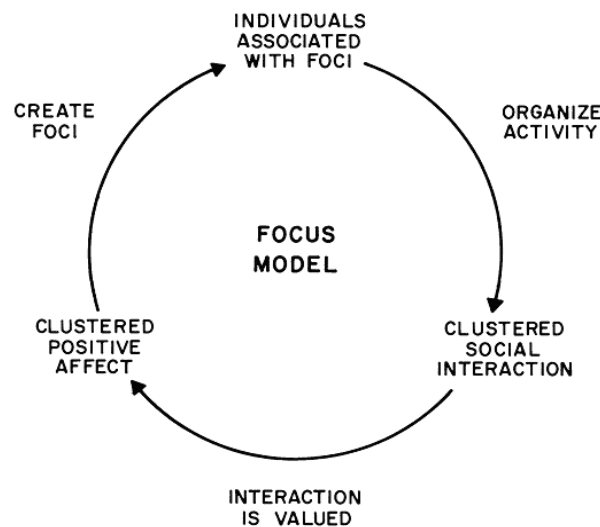


Figure 2.1.2-1. The Dynamics of the Focus Model: “Individuals can find or invent a focus around which to combine activities of various others...” (Feld, 1981, p. 11)

The research reported here conceptualizes new ventures as such a set of multiple interlocking networks where the “patterns of clustering” around distinct foci (Feld, 1981, p.10) within these networks corresponds to specific entrepreneurial activities that engage people both internal and external to the new venture. In other words, different entrepreneurial activities within a young venture may produce not one but many distinct networks each focused on mobilizing a specific resource or attaining a certain goal. Thus, the new venture itself is not defined by clear boundaries but by the multiple networks that link individuals and organizations. Indeed, it is this permeability and fluidity of the new venture boundaries

that makes it difficult to clearly distinguish the firm from the environment in which it operates unless the firm is disaggregated and analyzed in terms of the distinct activity-based networks. Therefore, the disaggregation of the entrepreneurial network is likely to yield new insight into network formation.

Such an analysis builds on the description by Lechner and Dowling (2003) and Lechner et al. (2006) pertaining to the “relational mix” of networks, networks formed around different categories of relationships or different resources exchanged. Lechner and Dowling (2003, p. 10) reported that “firms used different types of networks to realize growth...” Based on this earlier finding, Lechner et al. (2006) subsequently showed how the mix of different networks changes over the life cycle of an emerging venture. Lechner and Dowling (2003) and Lechner et al. (2006) used five different networks to examine the role of different networks on the development of the entrepreneurial firm: social networks, reputational networks, marketing information networks, co-opetition networks, co-operative technology networks. While not all of the network types conceptualized by Lechner and Dowling (2003) were found to be good discriminators of performance or successful network development in a subsequent study (Lechner et al., 2006), this body of work demonstrates the efficacy of studying entrepreneurship in terms of disaggregated networks. The conceptualization of the entrepreneurial networks in this manner, however, is vulnerable to multiple interpretations and as a result, presents challenges as a tool for data collection and translation into practice. Consequently, few scholars have extended their work.

A number of researchers have attempted to conceptualize the entrepreneurial network in terms of specific entrepreneurial tasks or patterns of activity that influence network development. Coviello and Cox (2006) provide evidence that different types of resources (physical, human, functional, organizational) are exchanged through different activities (mobilization, acquisition, development) in the organizational network at different evolutionary stages of an international new venture. Elfring and Hulsink (2007) studied how firm network formation was influenced by, among other things, key entrepreneurial tasks, defined as spotting opportunity, acquiring resources, and gaining legitimacy. While Santos and Eisenhardt (2009) found that nascent firms engaged in three different processes or activities when shaping firm boundaries: claiming, demarcating and controlling a market. Anderson et al. (2010)

observed that networking practices of entrepreneurs pursuing growth involved the following activities: liberating themselves from mundane activities, inspiring others in co-exploration, turning inspiration into a vision, articulating the product or service, and implementation of the plan. Valuable as they are, all these studies investigate network formation around attributes perceived as important by the researchers. At this early stage of entrepreneur network research, it is also potentially valuable to let the entrepreneurs themselves define the attributes around which entrepreneurial networks form, then determine whether such networks have explanatory power.

In this research, activities identified by entrepreneurs are used as a conduit for studying new venture emergence. Three processes of network development or path building from the existing literature provide the theoretical lens for understanding the unfolding of networks around entrepreneurial activities: entrepreneurial effectuation, path dependence and path creation.

2.2 The Process of Network Development

2.2.1 Entrepreneurial Effectuation

Entrepreneurial action and the creation of a network of committed stakeholders are central to an emerging method or logic² of entrepreneurship developed by Sarasvathy (2004, 2008) known as “entrepreneurial effectuation”. Effectuation, born from a study of theoretical decision-making by “expert” entrepreneurs, describes entrepreneurship as a process of network development that “transforms extant realities into new markets” (Sarasvathy, 2008, p.101). In the effectual framework, the founding entrepreneur begins with a unique set of means and seeks to increase resources to the emerging venture by “stitching together a variety of stakeholder commitments” and “shaping committed ingredients into unanticipated new confections” (Sarasvathy & Venkataraman, 2011, p. 120). Arising from this process is a network of committed stakeholders who actively participate in shaping the new venture (Sarasvathy, 2008). “Unmoored” from specific goals, the goals of the effectual network change based on the composition of stakeholders who comprise the network. As a result, the boundaries of the network and,

² Sarasvathy (2008, pp. 61-62) specifically distinguishes logic, “an internally consistent set of ideas that form a clear basis for action upon the world,” from theory, “a statement about the truth or otherwise of phenomenon of the world.”

indeed the new venture itself, are fluid spanning both the organization and its environment as it creates new markets and alternatives (Sarasvathy, 2008).

In contrast to Lechner and Dowling (2003), Lechner et al. (2006) and this study, however, Sarasvathy (2008) limits the conceptualization of the effectual network to a single network of stakeholders. In addition, the description of network development that emerges from effectual logic was derived from the researcher's interpretation of entrepreneurial action based on responses by practicing entrepreneurs to hypothetical problems or activities extracted from "informal consultations", "case studies and histories of startups" (Sarasvathy, 2008, p.23). Thus, further development of entrepreneurial effectuation may be achieved by studying the emergence of entrepreneurial ventures in terms of multiple interlocking networks of stakeholders that form around entrepreneurial activities explicitly identified by founding entrepreneurs as important.

Sarasvathy's (2008) work contrasts with the research reported here in an additional way. While extolling the importance of purposeful entrepreneurial agency in building a network of committed stakeholders, Sarasvathy explicitly describes effectuation as a "intrinsically path-dependent" (Sarasvathy, 2008, p. 38) and offers a typology of how new networks are initiated and developed that includes "random chance", "some path-dependent fashion" or "through the deliberate activation of an existing network" (Sarasvathy, 2008, p. 117). The ability of the effectual entrepreneur to "control the shape of the future to the extent it is controllable through human action" (Sarasvathy, 2008, p. 116), however, appears to be inconsistent with the more passive role of the entrepreneur implied by path dependence (Sydow et al., 2009). A deeper understanding of path dependence and exploration of another process of emergence, path creation, may shed light on whether effectual logic describes a distinct process of emergence, is a path dependent process or a combination of path building processes.

2.2.2 Path Dependence in Network-Based Research

While it is generally understood that the emergence of entrepreneurial firms follows a path that is nonlinear, recursive and iterative (Pacheco et al., 2010), the entrepreneurial process in network-based literature is frequently described in terms of path dependence (Hite & Hesterly, 2001; Jack et al., 2008;

Lechner et al., 2006; Sarasvathy, 2008; Sarasvathy & Venkataraman, 2011; Slotte-Kock & Coviello, 2010) where the network and new venture are assumed to co-develop in predictable stages (Aarstad et al., 2010; Hite, 1998; Hite & Hesterly, 2001; Larson & Starr, 1993; Slotte-Kock & Coviello, 2010). There are two limitations with this approach.

First, emerging empirical evidence suggests that the historical bias toward the application of prescriptive and deterministic theories has limited the understanding of entrepreneurship (McKelvey, 2004; Ozcan & Eisenhardt, 2009a; Slotte-Kock & Coviello, 2010). Indeed, models that are “overly prescriptive”, as Slotte-Kock and Coviello (2010, p. 52) suggest, “do[es] not allow for sufficient innovation...” in a phenomenon described by McKelvey (2004) as “order creation.” Second, the meaning of path dependence as a description of the entrepreneurial process is unclear. Scholars of organizational path dependence suggest that the term has been broadly used as a “metaphorical” (Sydow et al., 2009, p.689) explanation of “how certain aspects of the past relate to current properties of the organization” (Vergne & Durand, 2010, p. 738). In reality, path dependence as a construct is ambiguous and subject to different interpretations (Sydow et al., 2009; Vergne & Durand, 2010). Since it is not clear whether the use of path dependence as a construct in network-based literature is intentional, a misapplication or simply not thoroughly developed, further exploration of this construct and its role in the emergence of entrepreneurial ventures offers an additional opportunity for research.

The path dependent perspective originated in the 80's to describe the process that constitutes technological paths that led to sub-optimal or inefficient technologies. The best known example is the case study by Paul David (1985 and 1986) which explains the dominance and persistence of the QWERTY keyboard despite the availability of more efficient designs (Sydow et al., 2009). However, it is W.B. Arthur (1989 and 1994) who is credited with modeling this phenomenon in terms of four principles: nonpredictability, nonergodicity, inflexibility and inefficiency (Sydow et al., 2009).

Path dependence has gained acceptance in the organizational arena as a construct to describe the creation of new institutions and the mechanism through which they become locked-in to a pattern of

action (Sydow et al., 2009; Vergne & Durand, 2010). However, it has also become the catch all for theories where “history matters” (Vergne & Durand, 2010, p. 736). Vergne and Durand (2010, p. 741) argue that this is a mistake since “not every historical process is path dependent.” They point out that categorizing theories such as absorptive capacity, resource accumulation, institutional persistence and imprinting as path dependent diminishes the value of path dependence as a distinct perspective since, its broad use implies, for example, that “both persistence and its opposite” can be explained by one theory (Vergne & Durand, 2010, p. 739). In order to avoid theoretical confusion, this study adopts the narrower definition of path dependence of Sydow et al. (2009) and Vergne and Durand (2010) as presented below.

Noting a need for a theoretical framework to clarify the dynamics of path dependence, Sydow et al. (2009) suggest a three-phase model for organizational development: preformation phase, formation phase and lock-in phase (Fig. 2.1.2-1). Their model describes a tapering of scope, choice and action in an organization where initial decisions lead to an increasingly constrained pattern of decision-making.

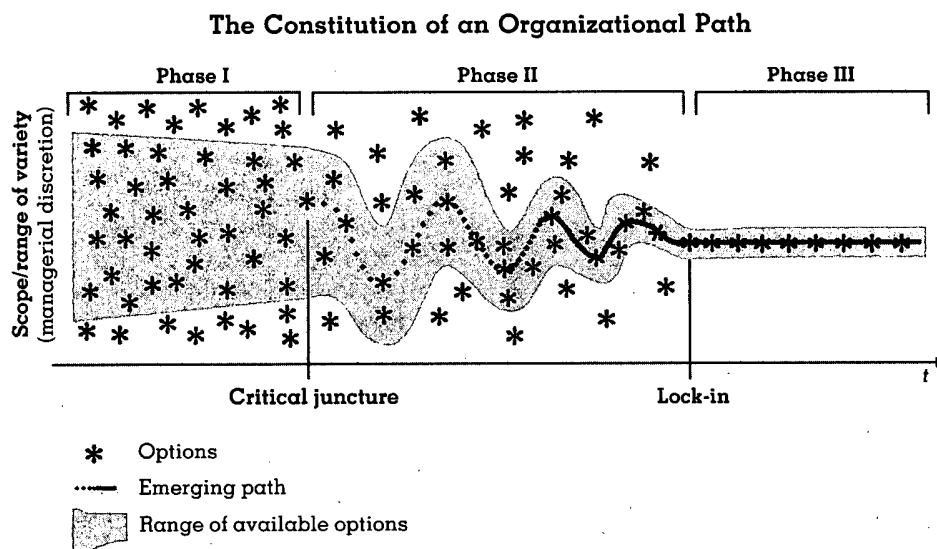


Figure 2.2.2-1. The Constitution of an Organizational Path (Sydow et al., 2009, p. 692)

In the first phase, preformation, the scope of organizational decisions is broad, decisions unconstrained and the outcome unknown. However, the culmination of the initial decisions and choices inherently embedded in certain routines, practices or strategies (anchored in a history carried into the organization)

triggers further similar patterns of action. Indeed, Vergne and Durand (2010, p. 741) describe the series of contingent events “whose influence on the path taken is larger than that of the initial conditions themselves” as one condition of path dependence. This continues until a “critical juncture” is reached where the scope of organizational action begins to constrict into an emergent path, labeled by Sydow et al. (2009) as the formation phase. During this second phase, patterns of action reproduce creating a self-reinforcing process that further narrows organizational behavior. This self-reinforcing process is identified by Vergne and Durand (2010) as the second necessary condition for path dependence. Eventually the path of choices restricts to the point where a preferred pattern of action becomes so embedded in the organization that it crowds out other alternatives and behavior becomes rigid. The “unintended consequences of former decisions and positive feedback processes” is lock-in, the final phase in the development of an organizational path (Sydow et al., 2009, p. 696).

Does the path dependence perspective of entrepreneurship truly capture the salient characteristics and represent realistically the entrepreneurial process? Critics suggest that certain implications of path dependence, especially as they relate to agency, are “problematic for a theory of entrepreneurship” (Garud & Karnoe, 2001, loc. 353). According to Stack and Gartland (2003, p. 489), the role of the entrepreneur in path dependence is passive and does not “leave any room for an entrepreneur to “mindfully” plan a role in shaping their environment.” Garud et al. (2010, pp. 760-761) criticize path dependence on the basis that it is “fatalistic” and does not allow the entrepreneur to “shake free” of history. In other words, the path dependent perspective has “entrepreneurs watching the rearview mirror and driving forward” (Garud & Karnoe, 2001, loc. 467). This perspective appears inconsistent and overly constraining for the concept of the entrepreneurship as creating new things or new ways, where the entrepreneur purposefully instigates a process through networks consisting of a changing cast of stakeholders. Indeed, even Sydow et al. (2005; 2009, p. 705) raise the possibility that paths may not “simply occur.” In fact, they do not rule out as plausible the emergence of paths as deliberate or intentional actions arising from “creative agency” (Sydow et al., 2005; 2009, p. 705). Furthermore, Sydow et al. (2009) suggest that an understanding of organizational path building may be enhanced by studying individual-level processes and network development within the organization.

Thus, it becomes apparent that the study of the emergence of entrepreneurial firms through the development of functional networks needs to embrace a perspective of path building in organizations that allows for intentional human agency on the part of actors within emerging organizational networks. By diverging from path dependence, the ability to capture rich themes describing emergent actions and activities of networks is enhanced. Citing a lack of consensus regarding the study of entrepreneurial networks, Jack (2010) suggests that research should be framed using two paradoxical views, a Ptolemaic perspective that emphasizes agency and places the individual (entrepreneur) as central in the network and a Copernican view that emphasizes the overall structure of the network including the web of interconnected networks in which it resides. The integration of these two perspectives is best embodied by a perspective rooted in structuration (Giddens, 1984) known as path creation (Garud & Karnoe, 2001).

2.2.3 Path Creation and Networks in the Making

Path creation originated in the study of technology entrepreneurship to describe the role of agency in shaping new technologies or new paths through a process that “builds upon the efforts of many” (Garud & Karnoe, 2003, p. 277). Path creation refers to “paths-in-the-making” (Garud et al., 2010, p. 760), a theory of emergence where purposive actions initiate interaction and engagement among actors to shape and navigate the translation of “‘emergent ideas into action’ and ‘emergent actions into ideas’” (Garud et al., 2010, p. 762). Garud and Karnoe (2001, loc. 102) argue that “[a]lthough we may be creatures caught in webs of significance of our own making (Geertz, 1973, p.4), we do possess the capacity to untangle these webs to create new paths” and “shape history in the making.” It is these foundational attitudes that make path creation a useful theoretical frame to study the emergence of entrepreneurial firms in terms of co-creation with functional networks of stakeholders... ‘networks in the making.’

Entrepreneurship from a path creation perspective is not a “random act of genius but is a disciplined effort involving many” in a process “fraught with failure” (Garud & Karnoe, 2001, loc. 570, 903). Conditions at the onset of the path creation process are not given but are “constructed through negotiations by actors” (Garud et al., 2010). The entrepreneur sets the process in motion and acts as a boundary spanner

interacting with a multiplicity of actors who engage with the process at different points in time (Garud & Karnoe, 2001, 2003). As actors join the process they become embedded by generating inputs that “continually and progressively” (Garud & Karnoe, 2001, loc. 366) transform the path either enabling or constraining future activity (Garud & Karnoe, 2001, 2003; Garud et al., 2010). The makeup of actors embedded in the emerging path is not stable, however (Garud & Karnoe, 2003). Actors can depart from the process and may do so unexpectedly in a manner that similarly enables or constrains future actions (Garud & Karnoe, 2001; Garud et al., 2010).

“[P]lans and visions emerge as part of the entrepreneurial process” (Garud & Karnoe, 2001, loc. 840). In the vernacular of path creation, “experimentation and exploration” replace “errors and mistakes” as ideas are evaluated and modified, even shelved or abandoned with each action and decision. (Garud & Karnoe, 2001, loc. 480, 481). Even accident, serendipity and luck are translated into opportunity (Garud et al., 2010). Throughout this process, however, the entrepreneur and engaged actors remain mindful of the amount and rate of innovation the market is willing and able to accept and digest. While gradual improvements in innovation may not “galvanize” support for an initiative or create a compelling story that entices customers or investors, too great an innovative leap runs the risk of “counter-reactions” from investors or customers that do not understand the benefits of the new innovation (Garud & Karnoe, 2003, p. 281). In this sense, it is not breakthroughs and leap-frogs in technology that are sought as the outcome, but rather a process of continual “resourcefulness and improvisation on the part of involved actors” that shape the emerging path (Garud & Karnoe, 2003, p. 278). The resulting “tension between learning and creation” contributes to the emerging path (Garud & Karnoe, 2001, loc. 894). Consequently, the future is uncertain and changing as situations along the path emerge requiring discussion, debate, experimentation, and bricolage (Garud et al., 2010). Therefore, what may emerge may be different than what was originally pursued (Garud & Karnoe, 2001).

What becomes clear from this narrative is the purposeful enactment by actors as the core of path creation. According to Stack and Gartland (2003, p. 489), “path creation stories highlight the active role of the entrepreneur and the firm.” Sarasvathy and Venkataraman (2011, p. 127) suggest examples in

literature on “relational exchanges and interpersonal negotiations point to fertile untapped resources for future entrepreneurship research.” Thus, a research approach is needed that enables the study of the emerging firm and the entrepreneur as they purposively interact with the environment, initiating interaction, creating ties and adapting to changes in the environment through constructive processes (Slotte-Kock & Coviello, 2010). Therefore to uncover the existence of path creation as the path building modality of an emerging venture, the relational–strategic approach to tie network formation, which emphasizes the role of agency, was employed in this study.

Indeed, the literature with a strategic approach to network formation is beginning to reveal this purposeful enactment of network participants by isolating specific strategic action employed during new venture emergence. For example, Zott and Huy (2007, p. 70) found evidence of four types of “symbolic actions” that enable entrepreneurs to obtain more resources for their new ventures: “conveying personal credibility of entrepreneur”, “conveying professional organizing”, “conveying organizational achievement” and “conveying quality of stakeholder relationships”. From a study of how entrepreneurial firms create high performing networks or portfolios of alliances, Ozcan and Eisenhardt (2009b, p. 246) developed a theoretical framework that, similar to the aforementioned study, “emphasizes agency and strategic action.” Recently, Hallen and Eisenhardt (2012) used empirical evidence to develop a theoretical framework of the actions entrepreneurs employ to form relationships. They identified two paths to forming efficient network ties in entrepreneurial firms: “reliance on existing strong direct ties” and “catalyzing strategies” to shape opportunities and induce tie formation, such as “casual dating”, “timing around proofpoints”, “scrutinizing interests” of potential partners and “crafting alternatives” to transform hesitant partners to committed stakeholders.

Although the strategic network approach facilitates discernment of purposive enactment, a key signal of path creation in an emerging venture, there is a limitation of this approach. What if the two central modalities of path building (path dependence and path creation) coexist or the firm transitions from one modality to the other based on the development of the firm? The focus on strategic entrepreneurial agency in network building may prevent the identification of self-reinforcing cycles or stabilizing processes

that are characteristic of a path dependent process. Consequently, a set of criteria that enables the identification of the existence of both modalities of path building is necessary in order to further the understanding of network formation in new ventures.

2.2.4 A Framework for Discernment of Path Building Modality

McKelvey,(2004) argues that different motors may explain different contexts in which firm development occurs. Indeed, even Schumpeter (1934, p. 78) recognized that entrepreneurship is a temporary condition: "...everyone is an entrepreneur only when he actually "carries out new combinations," and loses that character as soon as he has built up his business, when he settles down to running it as other people run their businesses..." His conceptualization implies a progression from 'path creation to path dependence.' In fact, it could be argued that the initial "formation phase" described by Sydow et al. (2009, p. 693) may be more appropriately explained in terms of the path creation process, especially since they do not rule out creative agency, a chief driver of path creation, as the source of path emergence. Indeed their earlier research presents a model of path building that includes path creation, path dependence and path breaking (Sydow et al., 2005). It is also plausible that entrepreneurial agency may diminish in importance as the firm attains an identity separate from the founding entrepreneur or "loses that character" as described by Schumpeter (1934). In other words, path creation, as the mechanism of network or venture emergence, could at some point in the entrepreneurial process coexist with and eventually give way to path dependence. Perhaps this is the "critical juncture" described by Sydow et al. (2009, p.693) where path creation ends and path dependence takes hold. Yet much of the network based literature presents network formation as a process that begins as path dependent and becomes increasingly intentionally managed through entrepreneurial agency (Coviello & Cox, 2006; Hite, 2005; Hite & Hesterly, 2001). On the other hand, Garud et al. (2010, pp. 769-770) suggest that path creation and path dependence are distinct perspectives and that "any process driven by a mix of the two...is mixing ontologies."

To enable a study of network formation in emerging ventures in terms of the different modes of organizational path building, the path building framework below was developed from a synthesis of the path dependence, path creation and effectuation literature (Table 2.2.4-1).

Dimensions (Garud et al., 2010; Vergne & Durand, 2010)	Path Dependence (Sydow et al., 2009; Vergne & Durand, 2010, 2011)	Path Creation (Effectuation) (Garud & Karnoe, 2001, 2003; Garud et al., 2010; Read et al., 2011; Sarasvathy, 2008)
Path Origin:		
Initial Conditions	Historically framed or imprinted with neither an assumption of determinism or completely unrestricted choices.	Constructed by actors who determine what part of the past to mobilize to support the vision of the future. (<i>"the bird-in-the-hand principle"</i>)
Instigating Event	Origination of process can only be identified in hindsight but begins with a contingency that triggers a course of action that results in positive feedback.	Purposive entrepreneurial action where the entrepreneur acts as boundary spanner generating momentum that mobilizes skills and resources from many actors, networks and multiple domains.
Path Development:		
Drivers	Positive, self-reinforcing feedback cycle from a certain pattern of action unintentionally develops its own pull through various mechanisms (i.e., coordination, complimentary, learning or adaptive effects).	Interaction of actors to accumulate inputs generates momentum that either enables or constrains actions as ideas are modified, rejected. Continual and incremental experimentation and learning from failure and feedback (<i>"critical revision"</i>) leads to a recombination and transformation of resources. (<i>"the pilot-in-the-plane principle"</i>)
Agency/ Stakeholder Engagement	Engagement is limited as actors replicate dominate patterns and practices in order to reproduce a path and particular outcome. Even new entrants lack ability to intervene and change course. Agency becomes increasingly inert in the absence of exogenous shock.	A multiplicity of actors intentionally interact to "accumulate inputs." Different actors bring different frames and resources. Engaged actors generate inputs and transform the emerging path through negotiation and debate. The constitution of actors is not stable so boundaries are negotiable and malleable. (<i>"the crazy quilt principle"</i>)
Contingency Response	If a course of action from a contingency results in positive feedback, the action gains dominance and is replicated to the exclusion of other actions triggering a self-reinforcing process.	Emergent situations provide context and opportunity for actors to "generate functionality" by strategically manipulating and cultivating the unexpected through bricolage and improvisation. (<i>"the lemonade principle"</i>)
Scope of Action	Initially broad and unrestricted with a constricting range of options as preferred pattern of action gains dominance, constricts choices and constrains decision-making.	Options are not unbounded in this collective effort of engaged actors whose entrance, departure and input may enable or constrain the emerging path. "Mindful deviation" and <i>"setting affordable loss"</i> ensures that action does not get too far ahead of the ability of the market and investors to accept innovation but creates enough action to generate momentum. Options may be reduced as the desire to exploit what has already been created dampens the "impulse to explore and create." (<i>"risk little, fail cheap"</i>)
Path Outcome:		
Outcome	Order and a reduction of ambiguity in a new organization (Pierson). However, this may lead to lack of variation in decisions resulting in persistent organizational rigidity or strategic persistence. Such lock-in may jeopardize the ability to respond to changes in the environment if no exogenous shock triggers breakout from the path.	Creation of new opportunity by the collective but what emerges may be different from original idea. Momentum generated by the process can become unmanageable causing the process to spin out of control unless lock-in provides "temporary stabilization" of path building, but this "logic of control" can become an "illusion of control" leading to escalation of commitment to a failing course of action.

Table 2.2.4-1 Framework for Organizational Path-Building.

The path building framework used in this study builds on the dimensions employed by Garud et al. (2010) and Vergne and Durand (2010) to highlight the key differences between path creation and path dependence. Seven dimensions were identified from the relevant literature along with specific criteria for each path building mode (Garud & Karnoe, 2001, 2003; Garud et al., 2010; Read, Sarasvathy, Dew, Wiltbank, & Ohlsson, 2011; Sarasvathy, 2008; Sydow et al., 2009; Vergne & Durand, 2010, 2011). Specifically, this framework was used to analyze and interpret the actions associated with the five key entrepreneurial activities that lead to network formation and the interaction within the networks that changed how these activities were pursued. It is interesting to note that, although effectuation is explicitly described in the literature as path dependent (Sarasvathy, 2008) and this study initially considered it a

separate hybrid mode of path building, when deconstructed in terms of the path building criteria, the key principles of effectuation appear to be directly aligned with the attributes of path creation. Therefore, the principles of effectuation were integrated with the criteria for path creation. Additional discussion of the use of this path building framework is presented in the next chapters.

2.3 The Opportunity for Research

Although grounded in a body of literature that is generally recognized and accepted in the study of entrepreneurship, this study not only embraces a perspective that differs from the dominant approach in current network-based literature, but also draws from a body of literature not typically integrated into network-based research. As a result, this line of inquiry is able to expand the understanding of new venture emergence by answering the following question:

How do networks shape and how are networks shaped by the distinctive entrepreneurial activities that support the emergence of a new technology venture?

Adopting a strategic-relational view of network formation, this research adds to a newer body of network-based literature that views the emergence of networks in terms of purposive entrepreneurial agency and seeks to answer how individuals become committed stakeholders in a network. At the same time, this study expands an underdeveloped area within network-based research that views the entrepreneurial firm in terms of multiple networks formed around specific activities, thereby challenging the dominant view of a single entrepreneurial network. By directly engaging entrepreneurs in defining the key activities in new venture emergence, five key entrepreneurial activities were identified and then used as the conduit through which networks were studied. This study links these two streams of literature within network-based research to a line of inquiry focused on the process of organizational path building. Synthesizing literature pertaining to three different path building processes, a framework was developed to investigate network formation in terms of two distinct path building modalities. This approach enables a deeper understanding of strategic action that leads to network formation around key entrepreneurial activities. Thus, a distinct contribution to the entrepreneurship literature is built by extending three streams of

entrepreneurship literature, not previously integrated, to develop a process narrative of entrepreneurial firm emergence.

3 RESEARCH METHODOLOGY

3.1 Research Design

This research is exploratory in nature, aimed at building a theory of how the entrepreneurial process unfolds in terms of the multiple interlocking networks that form around key entrepreneurial activities pursued in the building of a new venture. It has been suggested that a deeper understanding of how entrepreneurship unfolds in terms of network formation can only be attained through in-depth qualitative studies using process theory (Jack, 2010; Johannisson, 2011; McKelvey, 2004; Slotte-Kock & Coviello, 2010; van de Ven & Poole, 2005). Indeed, van de Ven and Poole (2005, p. 1385) argue that “[p]rocess research is capable of tapping aspects of processes that variance research cannot” by enabling the study of a complexity of different effects that produce change. Therefore, this study builds on network-based literature that employs a process perspective. Specifically, this research adopts an ontological perspective consistent with Approach III described in Table 3.1-1 by van de Ven and Poole (2005) where the entrepreneurial network is studied in terms of the action of emergence, not as a ‘thing’ and findings are communicated through a process narrative.

		Ontology An organization is represented as being:	
		A noun, a social actor, a real entity (‘thing’)	A verb, a process of organizing, emergent flux
Epistemology (Method for studying change)	Variance method	Approach I Variance studies of change in organizational entities by causal analysis of independent variables that explain change in entity (dependent variable)?	Approach IV Variance studies of organizing by dynamic modeling of agent-based models or chaotic complex adaptive systems
	Process narratives	Approach II Process studies of change in organizational entities narrating sequence of events, stages or cycles of change in the development of an entity	Approach III Process studies of organizing by narrating emergent actions and activities by which collective endeavors unfold

Figure 3.1-1 A Typology of Approaches for Studying Organizational Change (van de Ven & Poole, 2005, p. 1387)

Consistent with this perspective is the use of multiple case studies and intensive qualitative analysis (van de Ven & Poole, 2005). Thus, a multiple case study design involving three entrepreneurial ventures was employed. Although entrepreneurial network processes have been studied employing different methodologies (Hoang & Antoncic, 2003; Jack, 2010; Slotte-Kock & Coviello, 2010), Slotte-Kock and Coviello (2010) suggest that entrepreneurial network research can benefit from the type of data generated from case-based methodologies which are more widely used in business network research. Indeed, Sarasvathy and Venkataraman (2011) acknowledge that in-depth case studies and qualitative research are providing the level of detail required to understand entrepreneurship (Sarasvathy & Venkataraman, 2011). Eisenhardt and Graebner (2007, p. 27) similarly argue that the use of multiple cases “typically yields more robust, generalizable, and testable theory than single-case research”. Furthermore, multiple-case research produces more “varied empirical evidence”, allows for “broader exploration” and enables “comparisons that clarify emergent findings” (Eisenhardt & Graebner, 2007, p. 27). However, this type of design also presents challenges in terms of selecting the particular cases to study (Eisenhardt & Graebner, 2007; Yin, 2009).

3.2 Case Selection

An early question in the development of this study was whether a case should be defined as the individual founding entrepreneur or the entrepreneurial firm. A ‘case’ for the purpose of this research is defined as an emerging technology venture. However, previous entrepreneurship research has also adopted another approach. Historically, researchers have attempted to conceptualize entrepreneurship in terms of ‘who’ the entrepreneur is (Sarasvathy, 2004; Shane & Venkataraman, 2000). The entrepreneur has been portrayed as a hero who possesses certain attributes or behavior that drive them to pursue a heroic path of discovery and exploitation of opportunities (Blank, 2007; Garud & Karnoe, 2003; Sarasvathy, 2004; Sarasvathy & Venkataraman, 2011; Shane & Venkataraman, 2000). Yet, as some scholars argue, the singular attention on the individual entrepreneur has “generated incomplete definitions” (Shane & Venkataraman, 2000, p. 218) and “contributed to frustrated efforts to overgeneralize results” (Wiklund, Davidsson, Audretsch, & Karlsson, 2011, p. 4).

Case selection began by identifying founders of emerging technology firms who were willing to participate in a screening interview to discuss their experiences as entrepreneurs and their conceptualization of entrepreneurship. Emerging technology companies were specifically selected because they operate in business environments that are fast moving and rapidly changing. It is believed that studying companies in a dynamic environment would increase the likelihood of collecting data as network building is occurring and the impact of the network unfolds. The intent is to capture data that is not only retrospective in nature, but from actions occurring in real time.

Entrepreneurs for the screening interviews were identified during a three-month period from May 2011 to July 2011 from two sources: (1) existing personal direct relationships the researcher had with emerging technology companies and (2) referrals from advisors to emerging technology companies, such as CPAs, attorneys, partners in venture capital firms, angel investors and advisory board members, with whom I have a personal direct relationship. Seven sources of referrals led to introductions to 18 emerging technology companies. Initial introductions were conducted through email. The pool of respondents was subsequently reduced to thirteen founding entrepreneurs and companies using a filter based on the following six criteria: (1) the company is based in the Southeastern United States, (2) the company is less than seven years old, (3) at least one of the founders is still involved in the company, (4) at least one of the original founders is a serial entrepreneur, (5) the company is a B2B technology company and (6) the company is not engaged in biotechnology. These criteria were helpful in identifying companies that operate in a similar environment and under similar business conditions. The specific rationale behind each criterion is presented in Appendix 7.1.

Data was collected through face-to-face (8) and telephone (5) interviews using a semi-structured interview protocol (Appendix 7.2). The interview protocol was developed to capture the following data from entrepreneurs: background of the participant and the companies they have launched, definition of entrepreneurship, key activities in which they engaged to create and grow a new venture, definition of success and how they measure it, definition of failure, key concerns in building a company, factors that would cause them to 'walk away' from any new venture they founded and willingness to participate in

subsequent research. Interviews lasted from twenty five to ninety minutes. Eleven of the participants agreed to audio recording of the interviews. With the exception of two companies, preliminary screening interviews were conducted with the founder or co-founder of the company. The other two interviews were conducted with an interim CEO, who reported to the founder, and the spouse of a founder, who was also an investor, advisor and on the executive management team. Audio files were transcribed using a contract transcription service. I edited all transcripts to ensure integrity and accuracy of the text.

Responses to four main questions (key activities, definition of entrepreneurship, definition of success and definition of failure) were then organized in a table for comparison. Data from the interviews are presented in Appendix 7.3. The entrepreneurs in this initial screening generally defined entrepreneurship in terms of a process of building an organization and gathering resources around a unique idea or opportunity. Below are sample quotes that underscore this perspective of entrepreneurship:

- “A true entrepreneur is building...something unique” (Participant Case 1)
- “It’s the opportunity to build something that no one else has built.” (Participant Case 3)
- “...the act of creating a business that survives you...that’s more important and bigger than you are as an individual.” (Participant Case 4)
- “...to create something from scratch...build and develop the business and the people...get into something small and grow it into something much bigger...” (Participant Case 5)
- “The activities and abilities around seeing opportunities and capitalizing on them...” (Participant Case 8)
- “...taking an idea, a concept...all the way through to profitability and all the steps in between. Building up the right business plan, testing it, getting customers, getting funding for it, launching it...” (Participant Case 12)
- “...entrepreneurship is about a love of creating and the art of persuasion...you have to persuade a lot of different people a lot of different things...to build something that doesn’t exist...” (Participant Case 13)

With an understanding of the organization as the manifestation of entrepreneurship, the 'case' in the context of this research was defined as an emerging technology venture, not the individual entrepreneur.

According to Feld (1981, p. 16): "The focus theory directs the researcher to look for the particular foci that organize the activities and interactions of individuals in a situation. In order to find them, the researcher will ordinarily need to understand the major activities that organize the interactions of individuals." Therefore, key activities in which these entrepreneurs were engaged were also identified during the screening interviews. Participants were asked the following question: "Based on the experience with your company(s), what are the key activities of entrepreneurs and emerging entrepreneurial firms?" Excerpts from the responses are presented in Appendix 7.3. From these responses, five common activities were identified: (1) creation of the value proposition, (2) capital acquisition, (3) talent acquisition, (4) customer acquisition and (5) product development. Thus, the unit of analysis for this study was defined as the unfolding of these specific activities initiated by the entrepreneurs. These activities served as the conduit through which network formation was studied. The unit of observation was an individual key to the execution of one or more activities as defined by the entrepreneur or other case participants. These activities are defined in greater detail in Appendix 7.4. The identification of common key entrepreneurial activities based on direct responses from entrepreneurs not only further grounds the constructs of this research in practice, but provides a consistent foundation upon which to collect and compare data across cases. The development of constructs through direct engagement of entrepreneurs represents a departure from methodology in the relevant literature and a key contribution of this research.

After the initial screening, theoretical sampling (Eisenhardt & Graebner, 2007) and replication logic (Hallen & Eisenhardt, 2012; Yin, 2009) drove the selection of cases from the original thirteen companies. Three cases were selected for investigation. This is consistent with network-based research in entrepreneurship where the number of cases in the relevant literature generally ranges from three to nine cases (Coviello & Munro, 1995; Coviello, 2006; Hallen & Eisenhardt, 2008; Hite, 2005; Jack et al., 2008; Larson, 1992; Lechner & Dowling, 2003; Ozcan & Eisenhardt, 2009b). Although generalizable results are

not the objective of case study research, the use of three cases enables more robust data, increases “analytic power” and provide a stronger base of empirical evidence for theory building and subsequent theory testing than a single case (Eisenhardt & Graebner, 2007). A brief description of each case is presented below (Table 3.2-1).

	Coupon	Pixel	Prospect
Line of Business	Technology platform enabling targeted offers to consumers	Designs, manufacture and sales of hardware	Marketing automation software company (Saas)
Founding Year	2008	2006	2007
Number of Founders	2	1 (Spouse also active)	2
Funding Source	Venture Capital	Angel Investors, Friends, Family	Founder (Original Angel Investor bought out within first 9 months)

Table 3.2-1 Case Descriptions

The application of literal replication logic enabled the selection of three cases that share similar attributes based on the six screening criteria (Appendix 7.1). The purpose of identifying cases that operate in a similar business environment is to determine if findings are idiosyncratic or replicated (Eisenhardt & Graebner, 2007). Similar to the study by Lechner and Dowling (2003, pp. 6-7), the cases selected represent high growth potential emerging technology companies “with the same general attributes...in slightly different settings.” Although each company has been responsible for creating a new market, they represent different lines of business. Since investigating differences in network development attributed to product type or line of business was not an objective of this research, this issue remains a weakness of the study and at the same time an opportunity for future research.

Using theoretical replication logic, additional variance was purposefully built into the selection of cases to allow for further exploration of differences in network development based on the source of initial funding: institutional, angel, or self-funded (Eisenhardt & Graebner, 2007). Different patterns of network development were suspected to arise from different sources of seed capital since each source introduces a different set of ‘founding actors’ at the onset of the new venture. For example, the literature indicates

that angel investors interact with their portfolio companies to provide access to expertise and leads (Wiltbank & Boeker, 2007). Santos and Eisenhardt (2009, p. 646) argue that heterogeneity in the sample of cases will aid in the “grounding of theory.” So in this sense the similarities and differences between cases should benefit theory building.

3.3 Data collection

Data were obtained from two sources: (1) publically available archival sources such as company websites, published articles and interviews, founder blogs and tweets and (2) in-depth interviews. Data from interviews were collected over a six-month period using semi-structured interviews guided by an interview protocol. A total of twenty-two interviews were conducted, including three interviews conducted as part of the initial screening. Table 3.3-1 provides a list of study participants by case and role. Anonymity was promised to all participants to encourage candor. Twenty-one interviews were audio recorded. The audio file was electronically submitted to a contract service for transcription within 24 hours of the interview and subsequently edited by the researcher to ensure the integrity and accuracy of the text.

Coupon	Pixel	Prospect
COO/Co-Founder	CEO/Founder	CEO/Co-Founder
EVP Merchant Services	SVP Sales and Marketing/ Spouse of Founder	Director Client Services
VC Partner/Investor/Advisor	VP Operations	Former Angel investor
SVP Merchant Analytics	CFO	Executive Assistant to CEO
SVP Sales	VP Sales and Marketing/Investor	VP Sales
CEO/Co-Founder		President/COO/Co-Founder
SVP Business Development		VP Engineering

Table 3.3-1 Descriptions of Participants by Case and Role

The development of each case began with an interview with one founding entrepreneur. A specific interview protocol was developed for collecting data from the founder(s) (Appendix 7.5). The 'founder protocol' was designed to extract information on the formation of networks around the five key activities defined by entrepreneurs during the initial screening interviews. Five interviews with founders were conducted using the protocol. Interviews lasted from 30 to 90 minutes. All founder interviews were conducted in person. In two cases where there were co-founders, the interviews with the co-founders were conducted separately. At the end of each founder interview, the interviewee was asked to facilitate introductions to potential research participants identified in the interview as being key participants in one or more key activities. Introductions were provided by the founding entrepreneurs in person or by email. A different interview protocol was developed for case participants who were not founders (Appendix 7.6). The non-founder protocol was designed to collect data on the specific activity the participant was identified with in a previous interview. Interviews with non-founder case participants lasted 25 minutes to an hour. Of the fourteen non-founder interviews, five were conducted in person and the remainder by telephone.

At this point it is necessary to recognize the potential weaknesses of this method of data collection. Of primary concern are risks associated with retrospective bias, "impression management" and convergent perspectives (Eisenhardt & Graebner, 2007, p. 28). To mitigate these risks, Eisenhardt and Graebner (2007) suggest engaging participants with diverse perspectives on the phenomenon being investigated. By conducting interviews with participants from different organizations, different hierarchical levels, and/or functional roles, they argue that the risk of convergent perspectives will be reduced. Multiple participants (5-7) were interviewed for each case. Participants for each case represented different hierarchical levels and or functional areas within the firm and included one outside informant or contractor. In addition, Interviews were held in private and anonymity was promised to each participant. Furthermore, data gathered from earlier interviews was incorporated into subsequent interviews when possible to elicit responses from different participants on specific events. News articles on each case, websites, blogs and tweets of founders were monitored during data collection.

Eisenhardt and Graebner (2007) also recommend combining retrospective and real-time cases. In order to mitigate retrospective bias, the protocol was designed to elicit responses about past events, as well as recent and ongoing situations. Next, by selecting companies that are less than seven years old, operating in dynamic business environments and not yet having established their viability, the probability of capturing network development as it was occurring was increased. In addition, conducting interviews over a period of eight months (including initial screening interviews with founders), captured retrospective accounts of events, data at different periods in time, as well as data on events as they were unfolding. All of these features of the research design enhanced the ability to mitigate risk by allowing for divergent perspectives and corroboration or further investigation of key pieces of data.

3.4 Data Analysis

An iterative process that entailed cycling between data, literature and emerging themes was performed (Yin, 2009). Bounded by the research question, empirical data was transformed into an in-depth analysis for each individual case using the path-building framework to examine the unfolding of the five key activities and the formation of networks around those activities. This was followed by a cross case analyses to compare findings and identify differences based on venture funding source (Miles & Huberman, 1994; Yin, 2009).

Indeed, case study research is criticized for a lack of rigor, yet qualitative data of this depth cannot be captured through quantitative methods. Yin (2009, loc. 557, 581) identifies two sources of weakness in case study research that contribute to this criticism: (1) researchers do not implement “systematic procedures” and (2) when it results in “massive unreadable documents.” To address these issues, a systematic and repeatable process was created for the analysis of data that builds on the techniques prescribed by Charmaz (2008), Eisenhardt and Graebner (2007) and Yin (2009) (Figure 3.4-1). The process developed for this study involved a continuous and iterative process of cycling between data and literature in an effort to winnow and extract key data and emergent themes over multiple cases.

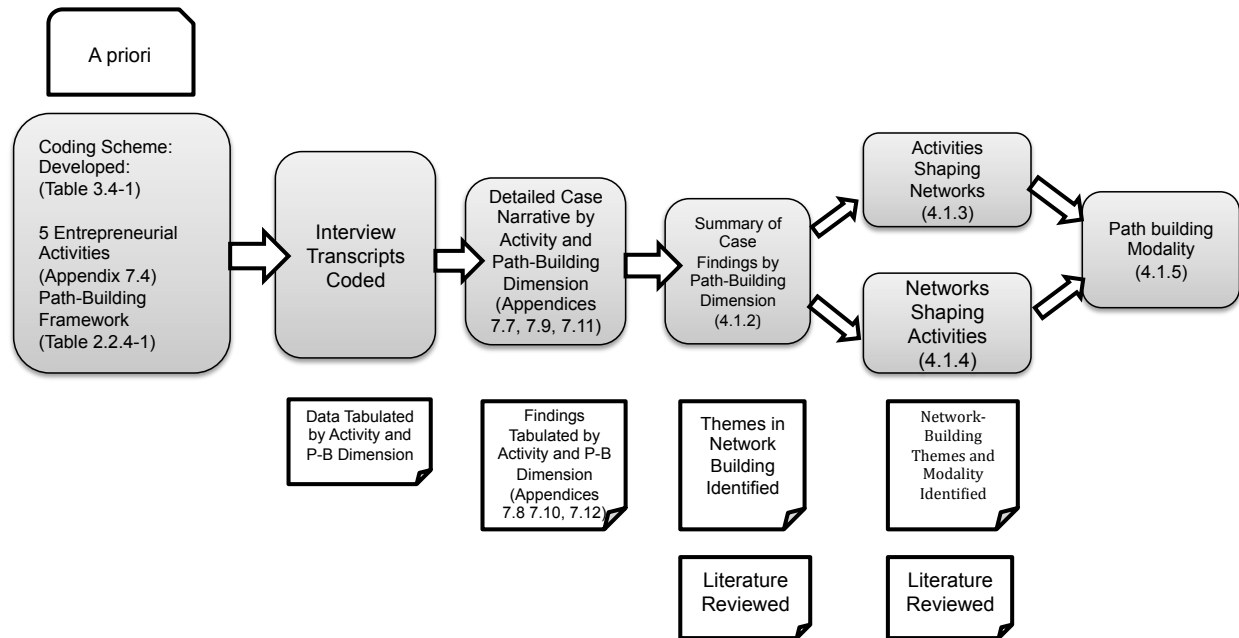


Figure 3.4-1 Process for Data Analysis

Beginning with a founder interview, cases were examined one at a time using NVIVO9 software to analyze interview transcripts. The coding scheme was developed a priori using the seven dimensions from the path building framework to code data corresponding to each of the five key entrepreneurial activities (Table 3.4-1). A detailed case history and narrative using the path-building framework was created for each case (Appendix 7.7-7.12). From these narratives, emerging patterns and themes were identified within each case that provided answers to the research questions and illuminated the relationship between key activities enacted by each young venture and the networks that formed around those activities to mobilize resources for growth. Next, a cross-cases comparison was conducted to identify common themes and patterns of action in network development, as well as differences between the cases that may have been attributed to funding source or other conditions. The data analysis phase of this study culminated in new insight into path building and network development in emerging ventures and recommendations for future research.

Coding Scheme	
Timeline Coupon	
Timeline Pixel	
Timeline Prospect	
Interlocking Networks	
Activity - Capital Acquisition	Initial Conditions Instigating Event Drivers Stakeholder Engagement Contingency Response Scope of Action Outcome
Activity - Customer Acquisition	Initial Conditions Instigating Event Drivers Stakeholder Engagement Contingency Response Scope of Action Outcome
Activity - Product Development	Initial Conditions Instigating Event Drivers Stakeholder Engagement Contingency Response Scope of Action Outcome
Activity - Talent Acquisition	Initial Conditions Instigating Event Drivers Stakeholder Engagement Contingency Response Scope of Action Outcome
Activity - Value Proposition	Initial Conditions Instigating Event Drivers Stakeholder Engagement Contingency Response Scope of Action Outcome

Table 3.4-1 Coding Scheme for Data Analysis.

4 FINDINGS AND DISCUSSION

4.1 Case: *Coupon*

4.1.1 *Coupon* Overview

Coupon was established in mid 2008 by two co-founders with no capital, no product and no employees...just their networks of senior level professionals from a number of industries across the country and ideas based on industry and consumer trends they observed in their previous jobs. The co-

founders met at their previous employer and were paired in the same operating unit because of complementary skills, one leading strategy and innovation and the other providing the operational and implementation expertise. After a major acquisition for a new line of business they were building failed to close (“the regulators killed the acquisition the day before closing”), an event described by one co-founder as a “catastrophic event,” they decided it was time to leave “corporate America” to try to build something on their own.

While one co-founder brought a deep and broad technology background with experience building businesses as a senior executive and venture capitalist, the other co-founder was focused on execution of strategies within a large corporate environment. Together they developed a concept that would lead to an innovative way for merchants to send targeted offers to consumers and a new revenue stream for an entire industry. By their own admission, they “invented an industry.”

With only their “skills and their networks,” the co-founders spent the first two to three months crafting the value proposition and vetting the business model within their network in order “to get to the right one fast.” After raising the first round of capital from the venture capital community in late 2008, they hired their first employees and spend the remainder of 2008 and all of 2009 focused on “fast prototyping” and testing with potential customers. In 2009, the company closed their second round of capital, predominately an inside round but added another institutional investor that passed in the first round. At the same time, they began onboarding “a broader set of business skills into the business, “ including building the sales organization. In 2010, the company “went live” with the first product to market. However, as it became apparent that the positioning of the product in the market was not yielding the desired results, the company replaced the sales organization and strategic direction. Major customer contracts followed, as well as two additional rounds of funding from new institutional investors.

In less than four years, the company has grown to over 90 employees and raised in excess of fifty million dollars. As competitors enter the new market, the co-founders remain focused on fast growth and execution in the space they “invented” and intend to dominate.

4.1.2 Coupon Path Building Narrative

Using the path building framework, a rich narrative for new venture emergence was developed. The detailed case narrative organized by entrepreneurial activity is presented in Appendix 7.7 along with a table that summarizes key findings for each activity in terms of the seven path building dimensions in Appendix 7.8. A summary of network development for this case in terms of the seven dimensions of path building follows. What unfolds is a story of new venture emergence that follows an evolving and changing path created by the interplay between key activities pursued and the networks that form around them.

Initial Conditions: Armed with over three decades of business experience, a positive reputation in the business community and an idea for a new business, the only resource on which the co-founders could draw was their extensive network of senior level professionals. While one co-founder had extensive roots in the venture capital community, the other brought deep relationships with executives of potential clients. They contributed no capital, were prohibited from hiring employees from their previous employer, were operating in a new city in which they had few business contacts and, were admittedly not even sure they could develop the idea into a viable business. Yet the co-founders were confident that if they could create a convincing business model, they would be able to unlock both capital and customers from their network. Thus at the onset, the co-founders identified resources on hand that would be useful, but were well aware that these would not be sufficient to build the new venture. So, while history guided the general direction of this new venture and provided important ingredients, the co-founders needed to devise ways to mobilize other critical resources. The past provided only part of the answers...the co-founders had to create a new future.

Instigating Events: Although it was an unexpected event that precipitated the departure of the co-founders from a large corporate environment, the failure of a major acquisition for a new line of business, there were four deliberate and strategic actions on the part of the co-founders that served to establish the new venture. First, the co-founders simultaneously vetted their idea for the business with two groups of individuals they knew and trusted: venture capitalists and senior level professionals with potential

customers or senior level professionals with access to potential customers. What they learned was that potential customers were excited by the idea, but expected the new venture to be backed by institutional investors. Thus, using feedback from their network they concentrated their efforts on VCs³ with which they had the strongest ties, and raised the first round of venture capital, enough to build a prototype. Upon closing the first round, the co-founders hired their first employees, developers to build the prototype. Finally, with a prototype in hand, the venture tested the technology with their first potential customer whose senior executive was a mentor and long time friend of a co-founder.

These instigating events demonstrated the ability of the co-founders to mobilize critical resources, capital and customers, from their existing network. In fact, it is in these early events that the respective networks of the co-founders begin to be distinguished based on the focal activity. However, while each event provided positive feedback that spurred the co-founders to pursue the next course of action, repeatable and self-reinforcing processes had not yet developed in the emerging venture.

Drivers: In the absence of a self-reinforcing business model (i.e., generating sufficient cash flow to fund growth), the new venture was propelled by distinct and incremental milestones, established by the co-founders, that would best position the venture to attract the next round of capital. Driven by the need to achieve each milestone before running out of money, only those resources, namely capital and people, absolutely necessary to pursue the specific milestone were engaged. People, including employees and customers, and strategies that slowed execution were avoided or changed. Those that facilitated growth were sought out and engaged. Although incrementally pursued, the milestones were cumulative and increased and diversified the types of activities and stakeholders involved in the emerging venture. For example, the first milestone was to raise sufficient capital to hire developers to build the prototype. This early activity involved only the co-founders and their existing network in the VC community. While the fourth milestone was to attract major corporate clients, an activity that involved a multiplicity of stakeholders, including investors, product developers and sales and support team to negotiate contracts. Consequently, attainment of each milestone was accompanied by an increasing need for structure

³ The abbreviation VC is used throughout this document to refer to venture capitalists or venture capital firms.

around each of the activities undertaken in order to reduce mistakes, improve efficiencies and process multiple sources of feedback.

Stakeholder Engagement: Stakeholders were drawn from the existing networks of the co-founders, as well as non-network sources such as the internet, recruiters and cold calls. Individuals who committed to the new venture typically engaged for one or more of the following three reasons; (1) they were aware (either by reputation or direct experience) that the co-founders (and later the senior management team) had the ability to execute the value proposition, (2) the opportunity appealed to their entrepreneurial aspirations, and (3) they understood the vision and the tremendous upside potential of the venture. To strengthen the level of commitment to the vision of the new venture, all employees became owners of the firm and retained that ownership even when they departed the firm.

As the new venture attained its milestones the viability of the value proposition became more likely enhancing the firm's ability to attract individuals and other resources. However, it also increased the complexity of stakeholder engagement in terms of the identification of individuals who could contribute, the diversity of skills and resources needed, as well as the number of stakeholders involved. Initial milestones leveraged the existing networks of the co-founders and involved single activities and stakeholders with specific resources. Subsequent milestones involved multiple concurrent activities outside the expertise of the co-founders and that of their original network necessitating a jump to non-network sources to identify resources. As a result, stakeholder engagement expanded considerably as new participants committed to the venture creating bridges to individuals who were not part of the co-founders' networks.

In moving from a small and narrowly focused group of stakeholders to a large and diverse group, the co-founders exercised prudence in the engagement of stakeholders in order to maintain control of growth in a capital constrained environment. Believing that input from too many sources can "crush" a young venture, the co-founders purposively managed the number, the nature, the rate of entry and the departure of stakeholders. For example, only customers who could "move the needle" were worth pursuing, the

“natural athlete” was recruited over the specialist and later round investors were chosen more for their access to markets than capital. In addition, the co-founders believed that organizations have “seasons” and not all people are appropriate for all “seasons.” They were well aware of the limited ability of humans to scale and adapt as quickly as the business. While past accomplishments and contributions of stakeholders were important for continued engagement, a focus on the future needs of the new venture in terms of skills, expertise and capability from stakeholders determined continued engagement. Thus, led by co-founders known for clearly defined performance expectations and praised for their willingness and ability to defer to the expertise of other stakeholders, a culture emerged in the venture that was both collaborative and cohesive but unwilling to yield space to those who don’t fit or contribute.

Contingency Response: Driven to achieve the next milestone but constrained by limited resources, the co-founders did not let opportunities go to waste nor did they waste resources on ineffective strategies. For example, they replaced functional teams as soon as it became clear that they were unable to meet expectations and adapt to growth. When they learned about a company with a similar business model in another industry, they seized the opportunity to recruit experienced managers from that company’s network to reposition the strategy of the new venture. The willingness to turn the unexpected into opportunity was similarly exemplified by employees who were able to overcome product limitations and objections from one market segment by creating a secondary line of business to address the specific needs of that market segment. Thus, for this new venture, unexpected events triggered new opportunities for stakeholder engagement and new strategies to pursue milestones.

Scope of Action: Building the new venture through the incremental pursuit of key milestones that would enable the next round of fundraising from investors, the co-founders admittedly micromanaged early activities to prevent others from slowing progress or wasting resources. They mobilized only those resources necessary to achieve the next milestone, limiting the number and input of stakeholders. While this facilitated initial milestones, which involved single activities and a limited group of stakeholders, later milestones involved multiple concurrent activities and broader sets of skills and resources. Thus, decision-making became increasingly less constrained as the co-founders deferred to the expertise of

their senior managers and multi-functional teams for ideas, solutions and prioritization of tasks. In spite of releasing decision-making at the operational level, however, the co-founders continued to maintain oversight at the strategic level. They were quick to course correct ineffective strategies and aggressively performance managed, even to the extent of being willing to “wreck and rebuild” entire functions and turn away customers who would not add value to the venture. So, while decision-making became less restrictive engaging a broader group of stakeholders at one level, activities continued to be bounded by the co-founders at a broader level.

Outcome: Emergence of the firm occurred incrementally and thoughtfully, one milestone at a time. This strategy enabled activities to be quickly adjusted based on market feedback resulting in market acceptance and increasing amounts of capital to be raised. Active management of stakeholder engagement (number, nature, entry and departure) removed impediments early in the life of the new venture. Aggressive performance management allowed for rapid change of stakeholders to upgrade skills, adjust strategy and enhance solution generation. Progression to each subsequent milestone, however, required a broadening of stakeholder expertise, resources and engagement in decisions. Progress and increasingly complex stakeholder engagement also revealed weaknesses in the new venture. Rapid scaling of the business and constrained resources prevented development of repeatable customer acquisition processes and revealed the need for a structured recruiting process as gaps in staffing threaten to impede future growth. Thus, while the current state of the venture was attained by the co-founders through diligent oversight and a broadening of stakeholder engagement in decision making, an increasing need for structure and processes to manage stakeholder engagement is beginning to emerge.

4.1.3 *Coupon Activities Shaping Networks*

The findings of this case show that entrepreneurial activities purposively instigated by stakeholders, shaped the networks of the new venture in three ways: coalescing participants, instigating change in participants and determining the makeup of participants. These are known as the ‘activity effects.’

First, the initiation of an activity triggered the coalescence of network participants and determined 'when' the network was activated and 'who' was included the network. As one co-founder explained, "the way we very much built the business was trying to get to the next key milestone before we die...you tend to get insanely focused on hitting the milestone." Each milestone represented a unique proof point, such as building a prototype, conducting a pilot of the technology or closing a "marquee name" client. As an activity (or activities) was initiated to pursue a particular milestone, the co-founders mobilized a unique mix of stakeholders who could provide resources vital to the execution of the activity. While 'what' the co-founders knew and 'whom' they knew was important, the new venture could not have been built without the co-founders strategically and incrementally reaching outside of their pre-existing networks and what they knew. So, the networks that developed were not simply a reconfiguration of participants from one network, but a unique mix of individuals from pre-venture networks, existing venture networks, networks of other activity participants, as well as non-network sources, such as recruiters, social media and the internet joined together through a specific activity in pursuit of a specific goal.

For example, after raising the first round of capital, the co-founders began product development for their first prototype. Although they had the expertise to design the product, they did not have the skills to build the product, so they needed to recruit technical expertise. What they learned was that their networks were not helpful. Not only were they prevented by contract from recruiting from their previous employer, but they had established the company in a city in which neither had previously lived or worked. In addition, as one co-founder explained, "it was not through our network because our network is very national and very senior." So they turned to digital networks, such as social networking sites and online job boards, which provided access to human resources not available through their personal networks. This enabled the co-founders to put together a team of "classic early stage developer[s]" capable of producing large amounts of code for fast prototyping. One co-founder described them as "quirky...they were a great little team. And they were excited about the vision." This team constituted the first employees of the firm and was formed specifically for product development and more specifically to build the prototype.

Second, the outcome or efficacy of an activity instigated changes in network participants. While positive outcomes and increased intensity in activities served to attract new types of stakeholders or create a greater need for stakeholder engagement, negative results from an activity resulted in the departure of stakeholders, including the dismantling and rebuilding of entire networks. Continuing with the previous example from product development, after the prototype was built and successfully tested, the product had to be modified for scalability and peer review to meet the demands of the growing customer base. As one co-founder described it, “[T]he problem we had almost universally with that team is when we got just a little bigger and we had to have a little bit of management structure in place and a little bit of process, they sort of started dropping and being ineffective.” Consistent with the co-founders’ philosophy that “[h]uman beings can’t always scale as quickly” and their practice of aggressive performance management, nearly all the original team was replaced with “more mature sort of code writers.” In addition, the network built around product development expanded to include stakeholders from other functions of the company who contributed input based on the growing customer segments and markets they were serving.

Third, the strategy pursued by a specific activity determined the network constituents. For example, Capital acquisition was not a continuous activity, but one that was initiated by the co-founders after certain milestones or proof points were attained. As the new venture emerged, the type of investor sought changed. One co-founder explained the expectation of stakeholders in the early rounds of capital acquisition as follows: “Money and just being supportive. What you don’t want is an investor who’s going to tell you how to run your company.” However, after the launch of the product, customer acquisition became a focal activity and this influenced the selection of later round investors. The third round of fundraising “was far less around the money... but far more around the person.” In fact, the investor brought in this later round was pursued largely because of his “network of senior people that’s unbelievable.” One co-founder described him as “our hardest working sales guy.” Similarly, the most recent round of capital acquisition, was driven by market expansion, “[W]e have international expansion to worry about. Let’s go find a good international expansion partner.”

4.1.4 Coupon Networks Shaping Activities

While distinct activities shaped the networks, the reverse was also true. The networks of individuals who committed resources and engaged in building the new venture, shaped the activities that supported the emergence of this venture in two ways: determining the strategy of activities and impacting the speed of execution of activities.

First, networks constituents determined the strategy of the activities. The strategy of an activity reflected (1) the resources that existing network participants brought to the network and (2) new stakeholders the venture wanted to attract. For instance, the pursuit of venture capital as the initial strategy of capital acquisition, was based in part on the strong VC network of one co-founder, a former venture capitalist, coupled with institutional backing as a requisite condition of another important group of stakeholders, potential clients. As described by one co-founder, “[W]e knew from day one that if we did not have major investors behind the company, no [customer segment] was going to engage with us...so we talked to people that we knew in [customer segment] well. But three minutes into the conversation, “So how much money have you raised from your investors?”” In this case, stakeholders or potential stakeholders from two different networks associated with different activities determined the capital acquisition strategy.

Indeed, a more dramatic example is seen in the customer acquisition strategies adopted by the original and the current sales team. While the sales teams built by each sales manager effectively leveraged their personal networks, experience and skills, the heads of sales came from distinctly different professional backgrounds. Thus, the teams they built and strategies each enacted as a result of their different perspectives differed. The outcome of these strategies also differed. One co-founder remarked that the digital strategy adopted by the first team “was all making sense except they weren’t selling anything.” What they realized in the end was that the head of sales “didn’t know a damn thing...his network and his sales experience and his skills were all wrong.” So, a year after hiring the first sales manager, the co-founders hired a recruiter to find a replacement from an industry with a similar business model. The co-founders learned about that particular industry during fundraising, but had no direct connections to the industry. The new head of sales brought a “different playbook” and had to “completely wreck and rebuild our [sales] organization...tough things the company had to go through,” according to

one co-founder. In this case, network constituents did determine the strategy of the activity. In fact, the successor sales team not only repositioned the sales strategy, but they also were able to develop a secondary business model “that we never envisioned and it had never really been thought of relative to the revenue potential to this business...could be a pretty significant side business for us.”

Second, networks impacted the speed of execution of activities. By facilitating access to resources, such as capital, expertise and customers, the networks enabled activities to unfold quicker than if resources had to be developed from scratch, train and teach people from the ground up, learn by trial and error and gain access via cold call. The speed with which the co-founders were able to access capital in the first two rounds, for example, was credited to the network of one co-founder:

[B]ecause I was a VC, I had a pretty big network of VCs. We didn't talk to that many. We went straight to [General Partner at a VC firm] who was the guy who hired me there... And then we went to [another VC firm] where I sat on a couple of boards with [a General Partner]. So where we were lucky I guess is we knew a couple of VCs incredibly well. They knew us and trusted us and so that made that process easier.

The venture encountered the same “luck” with the strategic investors they brought in during the later rounds of fundraising. The third round investor facilitated customer acquisition in the following manner: “[H]e's flown us everywhere and opened up a door that we would be working at a year.” Similarly, the impact of the fourth round investor on the efforts to expand their market was described as follows: “[T]hey are literally going to help us expand internationally to all the major countries in the world frankly in a much faster rate than we could ourselves.” Notably, the word “luck” was frequently used by case participants to describe these situations. While luck may have played a role, it seems that the intentional and strategic management of networks may have been at the root of this network effect.

Alternatively, when networks had participants who could not deliver critical resources, activities unfolded more slowly or ceased to contribute to venture emergence. This was the situation with the initial network built around product development, as well as the original sales team. While the former slowed development of the technology and the latter slowed customer acquisition, both set the company back a

year in terms of revenue generation and growth. With this venture, speed of execution was important in order to achieve milestones before running out of capital.

4.1.5 *Coupon* Path Building Modality and Networks-in-the-Making

The findings of *Coupon* revealed a process of network development that was more consistent with attributes of path creation as defined by Garud et al. (2010) than of path dependence defined by Sydow et al. (2009). Path creation as the dominant mode of path building in this case implies that network formation was not a “random act of genius” (Garud & Karnoe, 2001, loc. 903) but a result of purposeful action on the part of stakeholders. The case evidence, presented in terms of the ‘activity effects’ and ‘network effects,’ supports this assertion. Most notable from these ‘effects’ is the continuous ‘funneling and filtering’⁴ of network participants through active and thoughtful network management. As milestones were pursued, the networks that unfolded were subject to a continual process of mobilization and reconfiguration of stakeholders and resources. The co-founders of this venture, however, were aware of the “potential dark side” (Gulati et al., 2000, p.203) of networks. That is, too much of a good thing can hamper emergence of a young venture. In fact, one cofounder expressed his cautious approach to network building as follows: “I do think a way to crush a new company is to get too much of a network, around it. Because they take time... Because managing all these relationships and knowledge and all these people “helping you” takes time.”

As a result, networks were carefully managed in terms of the number and types of stakeholders engaged, as well as their entry and departure. Stakeholders, including investors, employees and customers, were engaged only if it was perceived that they would not impede progress and could add value. This strategy manifested as a recruiting strategy of hiring the “natural athlete” since, according to one senior manager, “if you hire someone to do something specific, it doesn’t really work because tomorrow we are doing something different.” In addition, only those potential customers who could “move the needle” and not “destroy the value” were engaged, and investors who could be “strategic partners” providing access to customers and markets were sought. A more dramatic example of the active management of networks,

⁴ I thank committee member, Ben Oviatt, for this catchy phrase.

however, was the aggressive performance management of employees. As one co-founder noted, “the company as a business is scaling very quickly. Human beings can’t always scale as quickly.” For instance, the co-founders were willing to “wreck and rebuild” entire functional teams “not because they’re not good people...they serve a value for a period of time and then [the company] just grows above and beyond them.” As one senior manager described it, “the sword swings fast, fast and hard.”

The incremental building and active management of networks through this continual process of ‘funneling and filtering’ of stakeholders and resources implies that the boundaries of this emerging venture were dynamic, unpredictable and changing. Networks and firm boundaries were being shaped and reshaped by these actions as more stakeholders and types of stakeholders were engaged in the building of this young venture. As one member of the senior management team put it, “We’re creating the path. It’s really an open field or an open slate.”

With that said, case participants also revealed the emergence of processes around decision-making. As one co-founder explained, input from a growing base of stakeholders coupled with resource constraints lead to a more structured decision-making process:

...it’s a prioritization process that happens company-wide now...you have stakeholders from each of the major areas saying this is what we’d like to build. We put a priority on it based on the estimated value and the estimated time it’s going to take and then company-wide we say here’s what’s going to be in our next release...it’s very well established relative to what it was the first year.

In contrast, the absence of structure was becoming an impediment in other activities. One senior manager commented, “we’re building and running at the same time...it’s hard to get down a repeatable [customer acquisition] process this early in our life cycle...it’s the instability of a new company and our processes.” Similarly, noting that talent acquisition is their biggest constraint to growth, one co-founder admitted, “We haven’t had a recruiting strategy...I know that’s not sustainable...Going forward we need a recruiting strategy...we probably need someone in the company whose primary role is to think about recruiting.” Thus, as networks were being actively managed around entrepreneurial activities, increased

stakeholder engagement appeared to increase the need for stabilizing processes. Whether this is indicative of a shift from path creation to path dependence or the beginning of concurrent modes at play is yet to be determined.

4.2 Case: *Pixel*

4.2.1 *Pixel* Overview

When two serial entrepreneurs married, one result of this sacred union was the creation of a perpetual cycle of innovation. In the mid 2000's, while one spouse was busy growing a business, the other spouse was searching for the next big idea. Inspiration came from identifying an emerging trend and a technology gap in the industry in which his spouse was engaged. While participating as a judge and mentor for an emerging technology showcase in 2006 the entrepreneur came across a technology that ignited the vision for a new product that would enable him to exploit the emerging trend. Later that year, *Pixel* was established, seed capital was raised from friends, family and angel investors to purchase the technology and an advisory board of "science guys" to determine "what's best to build out of the technology" was formed.

Guided by feedback from potential customers, the founder, his technology advisors and in-house engineers spent the next couple years transforming the technology into a marketable product. The founder concurrently worked with the head of sales and marketing to develop the sales strategy and sales team to launch the technology in the market. While research and development by the new venture advanced science and won awards, producing a commercially viable product was challenging. In addition, there was a tension between engineers who wanted perfection and the need to launch a product to generate income to sustain the business. The venture struggled to raise sufficient capital from friends, family and angels. And perhaps it was by divine intervention that the next wave of employees and contractors accelerated progress.

First, was a senior engineer with a deep background in technology, operations and launching new lines of business who called the founder "out of the blue" in late 2007. The two had worked together at another venture and the founder seized the opportunity to hire someone he knew to handle daily operations and

engineering. Not only did this hire enable the founder to focus on fundraising, he helped to “manage their vision” and was influential in the decision to switch the base technology. The change in technology expedited product development and led to the unsolicited hiring of a seasoned sales professional who came to the company from a friend of a friend who recognized that this individual had experience with the technology and knew the markets the founder wanted to break into. Starting as both a contract employee and investor in the venture, this individual built a sales team that put “30,000 miles on the sprinter van⁵... hanging [the hardware] wherever we can get it hung.” The sales strategy, however, did not crystallize until 2011 when the founder fired the head of sales and marketing “because he didn’t have the ability to do marketing and sales.” To rebuild the sales strategy, the founder hired his wife who had recently left her role as CEO and sold her stake in her company. With sales and operations in the hands of seasoned professionals he trusted, the founder needed to fill one more role, that of CFO. After firing a number of CFOs, the founder hired a CFO who was also a successful technology entrepreneur who agreed to work on a contract basis in 2011. What he brought to the venture was experience in dealing with institutional investors, boards and implementing financial and sales systems to provide transparency while at the same time igniting a healthy pressure to continually improve top line performance.

The resilience exhibited by this venture over the six years since inception can be attributed (1) to the courage and commitment of the founder who was “absolutely willing to risk the reward/failure ratio of being the person in charge...Because that’s what you do in the [branch of the military] as an officer” and (2) to the loyalty of the employees, best summed up by one manager who said, “[I]f [the founder] calls me, I’m going to follow him.” The company is infused with confidence. One executive explained that the venture is poised to take advantage of “a land grab” and seize the “huge, huge opportunities” could lead to “tenfold” growth. It is yet to be seen whether this is ‘irrational exuberance’ or a projection grounded in market data.

4.2.2 Pixel Path Building Narrative

⁵ A sprinter van is a van or mini-bus with enhanced cargo space for commercial use.

A detailed path building narrative was developed from the case data that describes findings for each entrepreneurial activity in terms of the seven path building dimensions. The full narrative is presented in Appendix 7.9 along with a summary table in Appendix 7.10. A consolidated narrative that captures the key points for all activities in terms of the path building dimensions is presented below.

Initial Conditions: An entrepreneur with a background in R&D and commercializing emerging technologies observes a trend and identifies a technology gap in the industry that his wife, also a serial entrepreneur, is engaged. He begins to transform these observations into a concept for a new product and new business. Through contacts from his spouse, the entrepreneur vets the idea with potential customers and receives positive feedback that he has indeed identified a need in the market that cannot be met through current hardware design and technology. The entrepreneur, however, has neither capital nor technology to develop the concept.

Instigating Events: While participating in an emerging technology forum as both a judge and mentor, the entrepreneur is introduced to a new technology developed by university scientists outside the U.S. Although intended for another application, the entrepreneur sees the potential to transform and develop this technology into a different category of products, one that would solve the business problem he had previously identified in the industry he became familiar with through his wife. With a potential technology solution within reach, the entrepreneur establishes a new company, and raises the first round of capital to acquire the IP and “hire the people to turn it into a company.” The new venture’s investors include the founder and his wife, family members, friends and high net worth individuals, some of whom invested in previous companies run by the founder or his wife. As the new owner of the technology, the founder then conducts a search and forms a group of scientists and engineers, “some of the best guys in this space in the world”, to advise, challenge and debate “what might work and what might not” as the technology is transformed into a marketable product. Concurrently, the founder continues to engage prospective customers on attributes they would like to see in the product. The founder then hires his first employee, an individual to lead sales and marketing and develop the strategy to deliver the future product to the market. Thus, the new venture begins with a broad base of stakeholders from multiple domains and

momentum fueled by positive market feedback, but no clear structure or processes to guide the emerging venture.

Drivers: There were four driving forces guiding the emergence of this venture. First, a commitment to develop products based on attributes defined by the customer meant that feedback was continuously gathered from stakeholders and integrated into decisions. In fact, the company considered attention to the needs of customers the basis on which they were going to compete in the market. Second, a founder that valued autonomy, boldness and adaptability created a culture that expected generation and debate of ideas, experimentation, action in uncertainty, a willingness to learn from mistakes, and perseverance in pursuit of solutions and success. For example, the technical advisory group was encouraged to challenge each other, the operations manager was not afraid to suggest that the founder scrap and replace the original technology, the new head of sales and marketing rebuilt the strategy and sales people provided market feedback that debunked original assumptions and changed the course of product development. Third, a sense of urgency to stake their claim in the market before the emergence of direct competition drove action. This driver manifested as a tension between stakeholders, such as engineers and technical advisors, who preferred to keep a product in development and perfect it, and investors and the sales force, who wanted to get a product in the hands of customers and make improvements based on feedback. The sense of urgency also meant that mistakes, whether in hiring or product design, were corrected expeditiously.

Stakeholder Engagement: This venture was built through the collaboration of stakeholders from multiple domains and under various arrangements. Scientists, engineers, sales and marketing professionals, customers, suppliers, investors and financial experts were drawn into the venture through existing relationships as well as non-network sources, such as recruiters, cold calling, telemarketing and social media. Even third party validation through awards, industry rankings and technology competitions helped draw in stakeholders. Stakeholders were engaged as advisors, employees, contractors and investors. Since limited capital limited the ability of the company to pay market rates for services, equity

in the company became an important form of compensation that also had a benefit of binding stakeholders to a common vision and goal.

The engagement of stakeholders, however, was not unbounded. When it came to investors and the board, the founder intentionally managed who was in and who was out. Capital was accepted only from investors who would not interfere with management of the business or require a high degree of interaction. In fact, all investors were required to assign their voting rights to the founder. The board, initially comprised of the largest angel investor and the founder, grew by only two members during the six years since inception. In addition, employees, advisors and contractors not able to fulfill their roles were quickly replaced.

Although the entrance and departure of stakeholders was purposefully managed, the founder encouraged and expected stakeholders in the venture to discuss, debate, brainstorm and innovate to improve the effectiveness of the emerging business. And, the same autonomy the founder sought from investors and the board to lead the emergence of the venture was granted to the executive management team so they could apply their expertise to develop strategies and processes to effectively execute their responsibilities. Thus, as participants in networks entered and departed the venture, the strategies that guided various activities changed as new participants joined the venture bringing different expertise, contacts and perspectives.

Contingency Response: The founder intentionally hired individuals with “high adaptation skills.” This attribute enabled the founder and the company to take advantage of unexpected opportunity and effectively respond to unpredictable outcomes. For example, two key employees were the result of “out of the blue” calls and the founder’s ability to recognize skills and experience that would be valuable to the emerging business. When product development based on the original technology acquired by the founder proved too challenging to develop, the head of operations and the founder were able to transfer learning from the original new technology to a technology in widespread use to create a new product category. Similarly, a “difficult repair path” with the first generation product that created a “make or break challenge”

for the company resulted in a unique design change developed by the founder and engineering team that became a new selling point for the product. In another instance, the new CFO devised a unique program to license hardware to customers so the new equipment would not have an adverse balance sheet effect after realizing that a major obstacle to sales was the adverse effect of capital purchases on a customer's balance sheet. The ability of the venture to take advantage of opportunities as they emerged and persistently rebound and innovate when confronted with critical product and market challenges underscores the "high adaptation skills" embedded in the venture.

Scope of Action: As activities unfolded, competing action in network building emerged which involved, on one hand, the active pursuit and engagement of stakeholders and, on the other, the development of structures, processes and rules for engagement of stakeholders. For example, the founder actively sought to bring in a diverse range of skills, expertise and resources critical to the development of the venture, yet not everyone who wanted to be a part of the venture was allowed in or allowed to stay. This scenario is illustrated by the ongoing need for capital and the focus on bringing in investors who could provide access to other sources of capital that was subject to certain conditions: potential investors who wanted to "help" in the management of the company or who required frequent interaction with the founder were turned away and all investors were required to assign their voting rights to the founder which discouraged commitments from some potential investors. Similarly, while the founder actively encouraged and expected collaboration to generate options and alternatives, he also enabled managers with autonomy to create structure and processes to guide and action. A sales strategy that initially had no boundaries, was transformed by the SVP of Sales and Marketing through collaboration with the sales team, the CFO, customers and potential distribution partners into a highly structured sales process for training, lead generation, channel sales and sales tracking and reporting.

Outcome: Since inception, the founder built this venture through a collaborative effort of a diverse group of stakeholders. Stakeholders were thoughtfully brought in based on the needs of the business, but were also managed out if they could no longer add value. As the venture progressed, original assumptions changed and structure and systems were added as a result of the interaction of a changing group of

stakeholders and synthesis of feedback. Consequently, both the product and the manner in which revenues were generated changed significantly. This commitment to active engagement of stakeholders led to continuous improvement in the business model, but also created loyal investors, employees and customers. Although the future is still uncertain, the company through its stakeholders has improved and continues to improve its prospects for success.

4.2.3 *Pixel* Activities Shaping Networks

Networks that comprised *Pixel* formed around key activities consistent with Feld (1981) and Fombrun (1982). The findings of this case revealed how the key entrepreneurial activities studied shaped the networks that developed during emergence of *Pixel*. Three 'activity effects' were identified: the coalescing of network participants based on activity, the continuous engagement of network participants and the changing of network participants based on outcome.

First, the initiation or anticipation of the execution of an activity triggered the coalescence of network participants and determined the timing and makeup of the network. Individuals were purposively, not randomly, brought into a network to assume a specific role critical to the execution of a particular activity. Indeed, even when the founder received a random call "out of the blue," engagement of the unexpected caller hinged on whether the experience and skills mapped to a current or future activity. So the forming of networks was not only purposive, but opportunistic as well. The intentional formation of the group of technology advisors to guide product development from the original technology serves as one example. The founder explained the singular purpose of that group as follows: "Science guys generally don't have money but they were some of the best guys in this space in the world and therefore they have the experience and breadth of knowledge I didn't have to know what might work and what might not." Similarly, when asked what investors brought to the table other than capital, the founder responded, "Financial connections." So investors were engaged for capital and access to capital, technology advisors were engaged for scientific knowledge and, according to the founder, the two groups did not interact.

Second, the activity being executed bound network participants by continuously engaging them in the exchange of resources and gathering of feedback to pursue the goals of the activity. For example, the founder grounded the product development in customer needs from the beginning. “I went to the potential customers with the idea of doing this,” he explained, “they defined the attributes they wanted to see and then I stayed in touch with them...And continued to show them the advancements along the way.” “Our DNA,” according to one manager, “says we as a company - we really care about our customers and we really want a solution that fits in the long term...we’re going to compete because we’re going to listen to our customers and we’re going to help understand their pain points and we’re going to develop products that fit.” The commitment to engaging customers throughout the execution of this activity created a strong bond between the stakeholders and provided momentum for continuous product improvements. One executive shared a comment from the head of a prospective customer: “You’ve listened to me and developed the product that really hits [our] sweet spot.”

Third, the outcome of an activity instigated changes in network constituents. With *Pixel*, it was the activities that underperformed expectations that resulted in the most dramatic changes in network participants. For example, a series of CFOs were hired and promptly fired because, as the founder explained, “they wanted to sit there and count money instead of raising them...they came in to rearrange money...And they failed. They were fired.” From the founder’s perspective, the chief responsibility of the CFO is capital acquisition. A series of missteps in hiring meant that fundraising became a persistent challenge and diverted the founder’s focus from other key activities, such as product design and customer acquisition. “I’m probably on CFO number 6 by now,” the founder explained. However, the current CFO, found through a local company that specializes in placing interim or contract CFOs in early stage technology ventures, brings extensive entrepreneurial experience, including fundraising and interacting with institutional investors. The current CFO commented that the founder often introduces him “as the first darn CFO that he ever liked and worth a darn.”

4.2.4 *Pixel* Networks Shaping Activities

While the nature and outcome of a focal activity impacted network development around that activity, the network participants themselves influenced the execution of activities through three 'network effects:' determining the strategy, determining the speed of execution and managing resources and stakeholder engagement.

First, network constituents determined the strategy of the activity. Each individual that coalesced around a particular activity in this venture brought a unique combination of skills, resources and experience to the execution of that activity. As individuals entered a particular network, their perspective and competency (or lack thereof) shaped the strategic direction of the activity, and as they departed they created voids in execution of the strategy or an opportunity to change the manner in which an activity was carried out. The difference in the customer acquisition strategy enacted by the two different heads of sales and marketing presented a dramatic example of the impact one person has on the strategic direction of an activity. Another example of this effect is found in the influence of the operations manager on the product development strategy. When he joined the company, the operations manager was not convinced that they would be able to overcome the challenges with the technology acquired by the founder. As he explained:

I'm more of the grassroots, feet on the ground, but from a practical perspective, I couldn't see how we're going to get there... so we started talking about [an alternate technology] somehow and I actually got some [alternate technology components] in here. Spoke with [the founder]...why don't we build [the product] using [the alternate technology]? His initial response was we can't get there on the price... And we let that go probably for four months and then all of a sudden, he came up with, why don't we do [the alternate technology]?

Second, network constituents impacted the speed of execution of activities. Time is critical for a young venture challenged to stake a claim in a new market before capital is exhausted and viable competitors appear. As one employee noted, "you never make your progress fast enough certainly to please your board, and to please your investors." Another manager pointed out that "Six months in a technology world, 12 months in a technology world, people have already passed you by.... you have to make the

decision to get out on the market.” In this case, there were clear examples of network participants that increased the momentum within an activity and those who constrained progress. Expanding the previous example, one executive shared how technology experts slowed down product development by getting stuck on a technological path and by a quest for perfection:

Engineers by nature...we got to make this thing perfect and they freak out “Why are we releasing what we have, this is not right, this is not good.” We can continue to sit here for the next six months to a year to get it better or you get it out there...We don't have this cash machine just sitting here funding us. We've got to get it out and take that risk so it's all about timing...If you go too early, you could make a big mistake but if you wait, people are going to pass you by...[the founder] was being advised by a lot of smart guys and I think we probably stayed on that a little too long...all these smart guys are engineers and professors and these, no offense, these PhD people who sit in a bubble, who get funded by the states...they don't really have to produce anything. So here, you've got to produce something, you know, we don't have money that just keeps coming in, we've got shareholders who want to see progress.”

As one manager noted, “if you left it up to this aisle [engineering], we wouldn't get any place, we would be sitting in a box.”

Third, network constituents managed resource utilization and facilitated stakeholder engagement by building structures and systems to guide and stabilize the activity. As networks were forming around key activities, the implementation of certain systems and processes could be traced to specific stakeholders in the network. For example, the current CFO saw his role as the person to “bring the process piece together with the visionary CEO.” He formalized the sales reporting process, “getting it into a form where it's kind of a more well-oiled machine,” and improved financial reporting systems adding that, “[the founder] said to me yesterday, he doesn't know what I'm doing, but the board seems to love what I'm doing.” Similarly, the SVP of Sales and Marketing reorganized the sales function and introduced processes for generating and qualifying leads, sales training and procedures for pursuing business that is more closely aligned with industry practices. Another member of the management team also saw his role as “trying to improve the process” and articulated his relationship to the founder and his spouse as one of

trying to “[m]anage their energy, manage their vision.” His vision is to add structure to the engineering function and improve the effectiveness of a single engineering function that currently handles both design and production: “Eventually, we want to grow out of that and just have a design group that works on new products and then a production group that works with our contract manufacturers to maintain our current products and to enhance and drive cost down.”

4.2.5 *Pixel* Path Building Modality and Networks-in-the-Making

The analysis of *Pixel* reveals networks developing in a manner consistent with path creation. From the time of inception, this venture was built around the input and collaboration of stakeholders who brainstormed, debated and implemented ideas. Participants that joined the various networks created options and increased alternatives. The findings of this case, however, also brought to light the emergence of path dependent processes as each activity unfolded. Rather than emerging as a progressive process of tapering choices from self-reinforcing feedback, as described by Sydow et al, (2009) the emergence of path dependent processes was punctuated in nature and generally instigated by a new network participant with the intent of providing direction and improving the efficacy of an activity. Thus, in this bi-modal path-building environment, path dependence did not replace path creation (at least not yet) but enabled it to flourish.

The sales systems and processes instituted by the new SVP of Sales and Marketing illustrates the emergence of these path dependent processes from Phase I to Phase II (Sydow et al., 2009). As one executive explained, the customer acquisition strategy under the original head of sales and marketing was “we’re going to hope and pray and talk to them [customers] all the time and they’re going to buy.” But as that same executive pointed out, “‘hope’ is not a sales strategy.” In addition, in their zeal to deliver customers, sales reps were unknowingly violating industry practice by engaging certain customers directly rather than going through customary channels and intermediaries. This alienated potentially important stakeholders in certain segments of the market. Furthermore there was no system of tracking the sales process and understanding what opportunities were lost or why the product was not gaining traction. Realizing that the ‘anything goes’ sales approach was not working, the new head of sales and

marketing explained, “I had to go talk to customers...figure out how they currently buy their products.” The result was the development of a sophisticated channel sales strategy coupled with, sales training, demand generation and lead qualification systems. This structured approach rebuilt trust in the market and systematized the sales process making more efficient use of sales reps. According to company executives, the new structures that enveloped the sales process, instead of constricting action, opened distribution outlets, increased referrals from within the industry and increased sales productivity.

This example illustrates a common theme that emerged throughout this case as activities unfolded: path dependent processes arose that guided network development and enabled more effective engagement of stakeholders and utilization of resources, but did not appear to inhibit the process of path creation or lead to lock-in. In fact, it appeared that the tension that was created by the existence of two seemingly opposing modes of network building actually complimented or balanced each other. This theme is further illustrated by the rules and conditions that the founder had around accepting commitments from investors. The structure around investor engagement preserved the autonomy of the company. Similarly the reporting systems and processes instituted by the CFO improved investor engagement, attracted additional investment and allowed the founder to shift his attention to customer acquisition and product development. Thus, in this case, neither lock-in nor chaos was found in the unfolding of activities as opposing actions from the concurrent enactment of path creation and path dependence.

4.3 Case: *Prospect*

4.3.1 *Prospect* Overview

Prospect involves an idea that was conceived by an entrepreneur in late 2006 who was simply trying to solve a problem with another company he had founded six years earlier while a junior in college: how to make sales and marketing more efficient. Thinking the solution might be beneficial to other similar companies, the entrepreneur spent the next 90 days “talking to people” with the goal of getting money and domain experts on board to create and build a solution. The domain expert was a college friend with whom the instigating entrepreneur reconnected through a chance meeting at an industry event earlier that year. This individual, who had a background in digital marketing strategies, became the second co-founder. Through relationships in the local technology community, the instigating entrepreneur identified

a co-founder to run sales, as well as an angel investor who also recommended a co-founder with a programming background. In March of 2007, the new venture was formally organized with four co-founders. Seed capital for the venture was provided by an angel investor and the co-founder who initiated the concept for the business.

The technology platform for a new service was built, but when the co-founders took it to market, they quickly found that it was not the service, but the technology platform that intrigued potential customers. Within a month, the first concept was “scrapped” and a decision was made by the college friends to become a software company. This change in direction, however, was no longer a fit for the other two co-founders, so they “parted ways.” In addition, the angel investor was bought out of his stake in the company, with a return on his investment. By the summer of 2007, a new lead engineer and eight college interns were hired to execute the new software strategy. According to one of the surviving co-founders, within 90 days of founding, “the business was pretty different than what we started and the people that we started with.”

With the help of a seasoned sales professional, the company’s fourth hire, who started in September of 2007, the new venture was able to record its first revenues by year end. However, market acceptance came slowly as they were helping to create a new market. During 2008, as competitors began to emerge and market awareness of the benefits of this software grew, the firm focused on building a repeatable sales process. By late 2009 “the business was building a nice momentum,” so the co-founders decided to “go raise some money to grow the business even faster.” After venturing into the world of venture capital in late 2009, however, the co-founders decided that organic growth and funding was preferable to the dilution of ownership and risk associated with institutional investors.

For the nearly five years since inception, this new venture has been “riding the wave of the emerging field” and has “gone from sort of a blip on the radar to one of the major names or providers in the world.” Although “it is still a market for early adopters,” the 65 employees are focused on growing the business,

“dominating” the market and “making a good name for ourselves.” The co-founder who initiated this process in 2006 admits “[t]he second time around is so much easier.”

4.3.2 Prospect Path Building Narrative

The detailed path building narrative for this case is presented in Appendix 7.11, followed by a summary table that breaks down key findings for this case in terms of each of the seven path building dimensions in Appendix 7.12. A summary path building narrative is presented below.

Initial Conditions: An entrepreneur seeking to improve the sales and marketing ability of a company he founded seven years earlier, while a junior in college, unexpectedly reconnects with a college acquaintance at an event for marketing professionals. This friend happens to have the domain expertise the entrepreneur is seeking to help solve his business problem. The two informally toss around ideas for months until the entrepreneur decides to develop one of the ideas he thinks will not only help his existing company in the marketing and sales of their product, but could also help other similar companies. He also convinces his college friend to join him in this new venture. Although he “didn’t believe 100% in the idea,” the college friend “believed 100% in [his] co-founder.” The two co-founders developed a one-year operating budget and set out to find additional expertise and capital to turn the idea into a business. Therefore, while the past provided the context and the purpose for the new venture, the co-founders did not have all the components necessary to bring the idea to fruition.

Instigating Events: Led by the initiating entrepreneur, the co-founders deliberately and strategically set out to mobilize expertise and capital that would enable them to turn their idea into a marketable product. Each action and decision provided direction for the next step in the process of building the new venture. It was through relationships in the local technology community, that the initiating entrepreneur identified individuals who were willing to commit to the new venture. The first to commit was an angel investor who had previously established a relationship with the entrepreneur for another project. The angel investor not only committed capital to the new venture, he recommended a technology expert who became part of the founding team responsible for building the product. Within this community, the co-founders identified

another co-founder to lead sales for the new venture. The four member founding team developed the first version of the product and then took this to market to gather feedback and customers. These very purposeful actions on the part of the co-founders to build the new venture proved their ability to mobilize critical resources from their existing networks to turn an idea into a product. However, at this point there were no repeatable self-reinforcing processes that defined the emerging venture.

Drivers: Three distinct forces drove the emergence of this new venture. First, continuous gathering and syntheses of feedback from stakeholders shaped decisions. From a major change in the business model to development of functional teams to minor modifications in the product, input from customers and employees impacted the direction of the venture. Second, maintenance of flexibility and autonomy enabled experimentation, failure and quick directional changes in response to feedback from stakeholders. In fact, despite identification and cultivation of outside sources of capital, the co-founders consciously chose to remain independent and bootstrap the venture. Not only did the co-founders not have to deal with expectations of other owners, but the constrained capital had a paradoxical benefit – mistakes were small so they were able to avoid “huge disasters financially.” Third, an incremental approach to building the venture meant that resources were mobilized and omitted based on the value added to the venture, whether it was employees, customers or even ideas for product modifications. Interesting to note however, are the specific processes and structures that developed around each of these drivers. For example, internal and external exchanges served to continuously capture stakeholder feedback and the structured recruiting process helped maintain culture and reduced mistakes in hiring.

Stakeholder Engagement: This venture was built around two groups of stakeholders, employees and customers, drawn from existing networks, as well as non-network sources. Whether they came through online job boards, social media, college fairs or recruiters, employees were largely attracted to this venture because of the culture and as the venture grew referrals from these stakeholders became the preferred source for new employees. New customers were similarly sourced from existing customer referrals and leads from online advertising, as well as sponsorships of online communities in which

potential customers were engaged. Thus, Prospect intentionally sought to bring stakeholders into its networks by casting a wide net to access other networks to identify potential network participants.

Networks of stakeholders were also bounded and intentionally managed. For example, a highly structured recruiting process was designed to maintain the culture that was viewed as a key strength of the young venture. In addition, not only did the co-founders decide on two different occasions to remain independent owners, which eliminated the need for a board, they specifically avoided establishing an advisory board. Instead, they chose to interact with mentors and peers through informal settings or professional forums when they needed advice. Furthermore, when it came to customer engagement, feedback from prospects on product modifications was given low priority, and feedback from customers that would not benefit the majority of existing customers was not considered.

Despite the boundaries and intentional management of networks, however, the complexity of stakeholder engagement increased as the venture progressed. For example, product development went from market input debated and prioritized by co-founders who directed implementation by the lead engineer, to an activity involving the polling, negotiation and prioritization of input from a growing number of customers and employees from all functions. And, as stakeholder engagement in underlying activities grew more complex, structures and processes developed around the execution of such activities. These systems did not limit or constrain input and interaction between stakeholders, but instead, enhanced the ability and efficiency of the young venture to gather and process input from the growing number of stakeholders.

Contingency: With particular attention to market feedback and a willingness to experiment and change direction, the two co-founders demonstrated an ability to turn the unexpected into opportunity. For example, when the original four member founding team failed to gain traction in the market with the new service, the two initial co-founders “scrapped” the original idea, disbanded the founding team, bought out the angel investor and rebuilt the company based on what they heard the market needed. The first two employees hired following the reorganization of the venture were identified based on “luck” and “accident.” The employees, an engineer and a sales rep, whose qualifications exceeded the expectations

of the co-founders became important members of the management team and critical to the growth of the venture. While these examples illustrate opportunities developed from the unexpected, there were also instances when the transformation of an emergent situation led to a process that narrowed action within the young venture. Recognizing a unique culture that had formed around the early group of employees, the co-founders created a structured recruiting process geared to preserving that culture. The low turnover, ability to attract employees and growth of the venture has been attributed to the persistence of this culture through this structured hiring process.

Scope of Action: Early in the formation of the venture, decisions were controlled and constrained by the co-founders. The co-founders persistently declined outside funding and saw no value in forming an advisory board. While these actions appeared to narrow the range of options available to the emerging venture and limit the networks of stakeholders, they actually provided the co-founders with complete autonomy to build an organization with the capacity to experiment, fail and rebound quickly. As managers were recruited, the co-founders pushed decision-making to the operational level by providing managers with the autonomy to build and shape their own functional areas. A culture emerged in which trying something new without fear of failure was the norm. Constrained financial resources, however, meant that growth in terms of customers and employees was incremental, and experimentation was cheap as long as failure resulted in a quick directional shift. Thus, there was a willingness to dismantle, replace and rebuild with respect to strategy and people. This was especially evident in the aggressive performance management of the sales team. New alternatives and opportunities were also continuously being created through the active engagement of stakeholders, both customers and employees. Again, constrained resources meant that input from the increasing number of stakeholders was organized, debated and prioritized so that only ideas that benefited most of the existing client base were implemented to ensure that change lead to increased value.

Outcome: The business that emerged was dramatically different from the original concept. While the unfolding of this venture involved a process of continuous change through the deliberate gathering and synthesis of feedback from stakeholders, stability was intentionally built into the process of emergence to

prevent stakeholder engagement from overwhelming the organization. The active management and engagement of stakeholders by the co-founders constrained resources in one respect yet enhanced autonomy, agility and opportunity in another. Growth that occurred incrementally as a result of limited resources had a positive benefit in that action characterized by autonomy and experimentation did not result in catastrophic failure. Structured processes that emerged around various activities enabled an increasing number of stakeholders to participate in shaping the direction of the venture by organizing and prioritizing feedback. However, these structures and systems also served to create homogeneity in the culture of the organization as well as the customers they pursued. Nonetheless, there are indications that continued growth of the venture will present future challenges to the maintenance of the culture in spite of the structure and processes in place.

4.3.3 Prospect Activities Shaping Networks

Networks associated with the emergence of *Prospect* did not randomly emerge, but were created out of strategic action to support specific activities of the venture, consistent with Feld (1981) and Fombrun (1982). The findings of this case revealed that entrepreneurial activities intentionally enacted by stakeholders shaped the networks of the new venture through two 'network effects': the coalescing of networks and the continuous engagement of participants.

First, the initiation and evolution of an activity triggered the coalescence of network participants by determining 'when' to activate the network and 'who' should be included in the network. This venture did not rise from a mass gathering of people the co-founders knew on a particular founding date. It was the result of an incremental and selective gathering, from existing network and non-network sources, individuals with specific talents and skills needed to execute a focal activity. New networks were initiated as new activities were added to the repertoire of the young venture. The sequence of hiring managers was directly tied to the initiation of specific activities. After the first version of the venture was "scrapped," the original two co-founders immediately hired an engineer to build the technology. No other employees were hired at that time and, in fact, the only support the lead engineer had was a team of eight summer interns, so in essence, he was actually the 'lone' engineer. Once the product was ready to be launched,

the co-founders hired an experienced sales professional as a sales rep to begin establishing the market for the product. He began customer acquisition as a sole rep aided by the support of a co-founder and the engineer who could hear his cold calls through the office wall and would instant message helpful tips while he was on the calls. A year later, when a customer base was established, an experienced project manager was hired to begin building a customer service and support team. A couple years later, as stakeholder engagement around product development became increasingly more complex, the co-founders hired a dedicated product manager to oversee the process. Each of these managers, in turn, built their teams incrementally according to the needs of the firm. One manager explained the hiring philosophy instilled by the co-founders as follows: “It was really all about being opportunistic and being able to have a good idea and opportunistically staffing around that idea.”

Findings related to capital acquisition provide additional support for this ‘activity effect.’ Two years after the founding of the venture, the co-founders decided to seek institutional funding to enable them to accelerate growth. According one co-founder, “We just talked to whoever would talk to us” and once the word was out, “people who had different connections...would open doors.” Although the co-founders had relationships in the local venture capital community, it was connections through other entrepreneurs and even a high school friend who opened doors to VCs in other cities. The network arose from initiation of the activity...and was deactivated as soon as the co-founders decided against using external funding for growth and terminated the activity.

Furthermore, while each new network that emerged from a specific activity involved a distinct group of participants, some networks included individuals new to the venture, as well as individuals from networks focused on other activities within the venture. The network that formed around product development best illustrates this. Product development network constituents originally consisted of the co-founders, the lead engineer and engineering interns. As the venture grew, the team of engineers grew to 10 full time employees and stakeholders from other networks who had an interest in product development were drawn into the process, including customers, sales reps and customer service associates from the customer acquisition team.

Second, the activity being executed bound network participants by continuously engaging them in the exchange of resources to attain the goals of the activity. The relationship of participants within a network was persistently reinforced through the active solicitation of input and the encouragement of debate and negotiation between network participants. Thus, participation in the network was not merely an exchange of resources to execute an activity, but an act of co-creation within the focal activity. This in turn strengthened the cohesion of individuals within a particular network. For example, “the first major iteration in the business” as described by one co-founder was based purely on direct market feedback: “It was very obvious once we had enough information, once we talked to enough people about the original idea, it was obvious that what we had built and the direction we were going, this other thing was going to prove to be much more valuable.” The solicitation of feedback from stakeholders did not stop with the first major shift in the business, but pervaded emergence of the venture. Customer acquisition and product development were also highly collaborative processes where feedback was continuously gathered and implemented.

For example, all functions contributed to building an internal knowledge base, “the corporate brain,” that provides the sales team with quick responses to questions or objections that might arise during a sales call. The client onboarding process according to one manager “was something we put together based on client feedback...and we’ve tweaked it since then, just based on client feedback as well.” Similarly, with respect to product development, as one co-founder explained: “[W]e make changes every day...it comes from a mix of customer requests and our own vision for the product...It comes from everybody at the company...every department is sort of a constituent and the clients are the main constituents.” Indeed, even internal and external exchanges were established to allow customers and employees to not only post ideas for product modifications, but enabled them to debate and vote on ideas. One manager noted, “[W]e usually get notifications whenever something is posted” and explained that if an idea got 55 votes “then we know it’s something important.”

This intentional commitment to stakeholder engagement not only allowed the venture to more effectively allocate resources and respond to market demand, but also provided a rapidly growing base of stakeholders with ownership in determining the direction of the business. A benefit of more engaged stakeholders is low turnover in the network, especially important to a business where customers are on month-to-month contracts and employees with specialized skills are in high demand. The outcome according to one co-founder: “Our clients love us because we bend over backwards for them.”

4.3.4 Prospect Networks Shaping Activities

Just as the focal activities shaped the networks that developed in the emerging venture, network constituents shaped the manner in which activities were executed through two ‘network effects’: determining the strategy and managing network exchanges.

First, network constituents determined the strategy of the activity. As a focal activity gathered participants into a specific network, the unique background and experience of each participant shaped how the activity was executed. As one manager explained, “[O]ne of the greatest benefits is getting to sort of craft what I do and shape it.” Another manager described the team he built as an “imperfect version of me.” Since the market was emerging as the venture was emerging, there were no established rules, tools and standard practices to define how stakeholders within a network should execute a particular activity. Therefore, it was incumbent on participants within a network to borrow from their own experience, the expertise of others in their personal networks or the creativity of the developing network to craft the strategies to execute the specific activity. In other words, as one manager expressed it, “[W]e were learning on the fly...We were learning as we went.” An example of the discretion managers had in crafting the strategies for activities comes from customer acquisition:

[W]e had the idea that we sell software [for a specific function]...it makes sense on paper. We called them [professionals in that function]...no one cared...from there we just went back to our initial assumption that B2B technology companies, much like [the company owned by the initiating co-founder]...would be companies that would drive the most value from a tool like

[Prospect]...We needed to go out and find out how sound it was...by stepping out and trying something new but then we redirected back.”

Second, network constituents managed resource utilization and facilitated stakeholder engagement by building structures and systems to stabilize and guide the activity. Execution of an activity with limited resources, especially financial and human resources, in a growing business in a new industry where there is no blueprint to follow could easily result in financial disaster if not thoughtfully managed. Network constituents in this case developed processes and rules that controlled the manner in which activities unfolded, but did so in a way that encouraged engagement of network participants. As a result, feedback was gathered and ideas were generated but action was organized and based on rules and prioritization based on value added to the venture. There are numerous examples in this case.

One example is the formalized approach to product development introduced by the VP of Product hired in 2011. One manager explains the process as follows: “[W]e come up with the top 10 things we’d like to see... and we have to explain and justify why we think this thing is important...every department in the organization has the opportunity to come up with 10 things and then you negotiate your way into having those in the product.” In addition, a structured performance management system was developed for the sales force that closely monitored activity to enable identification, intervention and dismissal of employees who were not performing according to clearly defined expectations. According to one manager, “[E]very time we do an employee survey we get nasty feedback from the sales reps who can’t believe I have the gall to hold them responsible for numbers.” This same manager who summed up the “mantra” of the firm when it came to hiring as “Hire slowly, fire quickly,” was also praised for a system of rewards that has helped young associates reach “places they’d never expected to be at this point in their lives.”

On the other side of the table are rules around customer engagement. Since the firm offers one product to all customers, it has a policy that product modifications must benefit at least 80 % of the customers. One-off changes to attract certain prospects or retain a particular customer could diminish the value of the product to other customers and misallocate company resources to serve a few customers to the detriment

of the broader customer base. One co-founder shared the firm's philosophy as follows: "We never listen to prospects because they want everything...So even if Microsoft said we'll sign up but you have to do this...if it doesn't meet the needs of the rest of our clients, it will just sort of ruin the product...we'd rather be opinionated." Therefore, expectations around accommodating changes are established early with prospective clients. Furthermore, there is a policy of firing customers who are unprofessional to employees. No customer business is worth ruining an employee's day according to one co-founder: "[W]e expect them to treat us well...so, if we ever have a client that is out of line or rude, they get transferred to me immediately so that I can fire them...they get one warning."

4.3.5 Prospect Path Building Modality and Networks-in-the-Making

The findings from *Prospect* further an understanding of the relationship between the execution of key entrepreneurial activities and the networks that develop around those activities in an emerging technology venture. When framed in the context of organizational path building, the findings reveal an interesting dynamic between path creation and path dependence. Evidence from this case points to path creation at the heart of network development, where stakeholders who opportunistically enter and depart from networks actively engage in shaping the business through feedback, negotiation and debate. While path creation was the basis for network development, path dependent structures simultaneously emerged around each activity to guide network development and resource utilization so that stakeholders who engaged in shaping the venture were accretive not dilutive to the emerging organization. These structures and processes built around specific key activities for a defined purpose bounded options, however there was no evidence that they enkindled a continuous tapering of action and choices when it came to network development. In fact, the findings show that these systems and procedures actually enabled autonomy and broader action by network participants. In contrast to the model suggested by Sydow et al. (2009) the creation of these path dependent processes were punctuated in nature and opportunistic, not progressive as described by the model of organizational path dependence.

Take the highly structured recruiting process. One co-founder explained the culture was created "sort of by luck": "[O]ur first dozen or so employees were fantastic...we looked around and said this is something

we want to preserve.” Intent on maintaining and replicating this unique culture, the co-founders identified attributes that characterized the group of employees: positive, supportive, and self-starting. They then developed a complex recruiting process, “a scientific process to make sure we keep that going.” The process includes handwriting analysis, skills testing and several rounds of interviews with an offer predicated on the “100% unanimous” decision of those involved in the interview process. This could be interpreted as the “positive feedback” that Sydow et al. (2009, pp. 694, 696) refer to that results in “self-reinforcing processes.” Although indicative of a path dependent process that clearly impacts network development around talent acquisition, the recruiting process did not constrain the engagement of stakeholders and the accumulation and synthesis of feedback in shaping the emerging venture. Instead, the recruiting process simply provided guideposts and mile markers for decisions, not a straitjacket. Other similar examples of this phenomenon, previously presented, include the performance management system for the sales force that helped retain performers, while enabling an early departure of those who could not meet expectations, as well as the systems for engaging stakeholders and prioritizing feedback for product development that bound network participants in product development but prevented the network from overheating and draining company resources trying to address all participant feedback.

In other words, the findings of this case show network development that was clearly driven by strategic action, not a “random act of genius” (Garud & Karnoe, 2001, loc. 903). The findings also present a view of network building that began as a process of path creation that actually enabled path dependent systems and processes to emerge. These path dependent structures and processes borne out of path creation then, paradoxically, stabilized and guided the continued process of path creation. In fact the bimodal process of network building enabled through the intentional action of stakeholders in this case, facilitated and contained stakeholder engagement to enable more effective engagement of stakeholders and utilization of resources, but certainly did not lead to “lock-in” at this point in the development of the company. Whether continued growth in the number of stakeholders will challenge the stabilizing structures of path dependence or the ability to engage stakeholders and experiment is yet to be determined since as one manager noted, “It’s starting to get to the point where not everybody knows each other really well...and then preserving the culture is difficult.” This case, however, provides another

perspective of path building in emerging ventures that challenges and expands the current body of literature.

4.4 Cross Case Analysis

4.4.1 Path Building and the Dynamics of Entrepreneurial Activities and Networks

Using the relationship between the execution of key entrepreneurial activities and the composition of the networks that form around those activities as the conduit through which to study firm emergence, findings from the individual cases provide rich insight into the dynamics of entrepreneurial activities and networks. Comparing the evidence across cases, however, yields additional insight into network development and firm emergence. Table 4.4.1-1 compares case findings along four dimensions, highlighting commonalities, differences and, most notably, revealing three distinct stages in the process of emergence.

	Coupon	Pixel	Prospect
Path Building Modality	Path Creation Conditions for Path Dependence	Path Creation Emerging Path Dependence	Path Creation Path Dependence w/o lock-in
Dominant Themes	<ul style="list-style-type: none"> • Continuous 'funneling and filtering' of network participants through active and thoughtful network management 	<ul style="list-style-type: none"> • As activities unfolded, competing actions emerged in network building to stabilize and guide activities 	<ul style="list-style-type: none"> • Path dependent structures and processes borne out of path creation paradoxically stabilized, guided and enabled path creation
Activity Effects	<ul style="list-style-type: none"> • Initiation of an activity triggered the coalescence of network participants and determined the timing and constitution of the network • The outcome or efficacy of an activity instigated changes in network participants • The strategy pursued by a specific activity determined network constitution 	<ul style="list-style-type: none"> • Initiation of an activity triggered the coalescence of network participants and determined the timing and constitution of the network • Activities bound network constituents through continuous engagement • The outcome or efficacy of an activity instigated changes in network participants 	<ul style="list-style-type: none"> • Initiation of an activity triggered the coalescence of network participants and determined the timing and constitution of the network • Activities bound network constituents through continuous engagement
Network Effects	<ul style="list-style-type: none"> • Network constituents determined the strategy of activities • Network constituents impacted the speed of execution of activities 	<ul style="list-style-type: none"> • Network constituents determined the strategy of activities • Networks constituents impacted the speed of execution of activities • Network constituents managed resource allocation and facilitated stakeholder engagement by building structures and systems to stabilize and guide the activity 	<ul style="list-style-type: none"> • Network constituents determined the strategy of activities • Network constituents managed resource allocation and facilitated stakeholder engagement by building structures and systems to stabilize and guide the activity

Table 4.4.1-1 Cross Case Comparison.

The first key observation from the case comparison is that the path building framework used in data analysis revealed path creation as the initial, dominant and foundational mode of network building in all three cases. This finding differs from the way firm emergence is often portrayed in the network-based literature where new ventures begin as path dependent or evolve from a path dependent mode to one that is intentionally managed. Differences in the definition of path dependence or a lack of in depth empirical research on the specific path building process in young entrepreneurial firms are two possible explanations that may account for this.

A second key observation from the case comparison is that the network building process in all three cases was not static. In fact, the findings actually point to a point of transition in network building that has not been fully investigated in the literature: the spawning of path dependent processes (or a need for such processes) from the process of path creation. This finding can be more easily understood by keeping in mind the specific definition of path dependence used in this study as the tapering of scope, choice and action or a constrained pattern of decision making from some initial decision or self-reinforcing process (Sydow et al., 2009; Vergne & Durand, 2010). In this study, path dependent processes were manifested as structures, systems, rules and practices that arose intentionally to guide, direct and control decisions and interactions within and between networks during emergence. While it was found that the process of path creation generated the need for path dependent processes, there was no evidence that path dependent structures replaced or dampened path creation in the cases. Instead, the processes emerged serially, but progressed concurrently.⁶ The driver behind the emergence of path dependent structures appeared to be improved efficiency in resource utilization.

Although unintentional when selecting cases for this research, each case represents a different state of development in path building as distinguished by the degree to which path dependence guided decision-making in activities. *Coupon* represents a path of emergence characterized by path creation that has created an emerging need for path dependent processes. Performance management and the prioritization of stakeholder feedback were largely ad hoc and at the discretion of managers instead of

⁶ I thank Ben Oviatt for finding a better way to articulate this finding.

based on specific processes and guidelines and a repeatable customer acquisition process had not developed because they were “building and running” at the same time. Study participants explicitly communicated the need for structure and processes, particularly around recruiting, product development and customer acquisition to enable the more efficient utilization of resources (i.e., time talent and capital) and prevent being overwhelmed by feedback and demands from a rapidly growing base of stakeholders from different networks. Moving along the continuum, *Pixel* represents network building where path dependent systems have begun to emerge to stabilize and guide, but not constrain, the process of path creation in certain activities. For example, a formalized customer acquisition process was being developed during the course of the study that integrated the financial administration of the company. The new structure and systems in this activity, initiated by a new head of sales and new CFO, helped opened distribution channels and led to the creation of novel financing programs in the industry. Finally, in *Prospect* path dependent systems and procedures were found to envelop and guide every key activity. For example, the highly structure recruiting process, rigorous sales training and tracking and the internal and external platforms for gathering feedback and ranking ideas around product development and modification were created to facilitate and moderate stakeholder engagement in an effort to ensure that those who joined various networks were additive and not impediments to firm progress. Similar to the other cases, it was the process of path creation that enabled the creation of path dependent structures to stabilize, guide and facilitate path creation itself.

The literature suggests that path creation, if not stabilized, can lead to action that can “spin out of control” (Garud & Karnoe, 2001, loc. 564). As each of these ventures grew, so did the number and nature of individuals who committed in some way to the growth of the venture. Attempting to interact, integrate feedback and respond to all of these stakeholders can easily overwhelm and deplete the limited resources of each firm. Perhaps the need for structure and emergence of path dependent processes may have been a way to manage engagement with this growing number of stakeholders, efficiently deploy resources and prevent activities from spinning out of control.

The literature also offers multiple perspectives on the transition or concurrence of modes of path building. Whether the findings of this study can be explained as the entrepreneurial transition described by Schumpeter,(1934) the “critical juncture” or progression through the phases described by Sydow et al. (2005, 2009), or the beginnings of concurrent process modes as suggested by McKelvey(2004), is beyond the scope of this research. These findings do, however, offer a gateway for further study and communication about the development of networks and firm emergence in terms of, not just the presence, absence or concurrence of modes of path building, but whether and how each mode of path building impacts key entrepreneurial activities and outcomes.

In addition to the insight into the dynamics of path building, a third key finding from the comparison of cases supports the view that networks are the direct outcome of the execution of distinct activities initiated in the pursuit of specific milestones. In fact, the effects of activities on network development were fairly uniform throughout the cases. In each case, it was the initiation of a particular activity that triggered the coalescence of network participants and determined the composition of the network. In addition, the execution of activities facilitated continuous engagement primarily through the solicitation of feedback, which bound network participants. And, unless there was a negative outcome in an activity, constituents within networks remained stable.

Conversely, network constituents also had an effect on the unfolding of activities. The skills, experience and resources of network constituents determined the strategic direction of an activity, as well as how quickly milestones were achieved. One notable difference, however, relates to the emergence of path dependent systems and processes. In *Pixel* and *Prospect*, network constituents intentionally managed resources and stakeholder engagement through the development of systems and procedures to stabilize and guide the unfolding of an activity. The data from *Coupon*, however, revealed that network constituents were not as focused on the development of such systems and processes in the execution of activities, although there was a growing recognition of the need to implement such structure in the future.

The findings from all three cases reveal a continuous interaction between an activity and the composition of the network that forms around the activity, each shaping the other as the venture emerges. The similarities in findings across cases provides support for using the networks formed around the five key activities as a conduit for studying path building in emerging firms.

Taking a broader view, if the boundaries of the venture are viewed as the sum of all the networks that form around activities being enacted in the firm, this dynamic between activities and networks illuminates how the boundaries of an emerging venture expand, contract and change during emergence. Using *Coupon* as an example, the three networks that formed around capital acquisition, product development and customer acquisition changed significantly during emergence as a result of changes in strategies of those activities. The capital acquisition network expanded from primarily venture capital firms who provided capital to strategic corporate partners who helped the company access new domestic customer segments as well as international markets. The product development network evolved from a small team of developers who specialized in fast prototyping to a network made up of traditional software engineers and developers as well as stakeholders from other networks such as customers and sales managers who redefined the product. The sales team went from a team of professionals from the digital media industry to a sales team from a more traditional advertising industry that changed significantly the customer base of the company. Taken together, the changes in these three networks as a result of changes in the strategic direction of the activities altered how the company defined itself in terms of investors, customers, geography, employees and the product itself. In essence, a study of network development is a study of venture boundaries.

4.4.2 Influence of Funding Source

The design of this study intentionally included variation for the method in which each case was capitalized. Each case relied on a distinct funding source: *Coupon* co-founders funded their venture using venture capital, the *Pixel* founder relied on angel investors, friends and family for funding, and *Prospect* co-founders bootstrapped their venture. This enabled an investigation of the impact that different types of funding sources had on network development and emergence of entrepreneurial

ventures. A summary of the results provided in Table 4.4.1-1 below reveals that there were differences in network development and firm emergence associated with the specific funding source. However, are the differences an outcome of a particular type of funding, or can these differences be attributed to broader strategic action on the part of entrepreneurs?

	Coupon	Pixel	Prospect
Funding Source	• Venture Capital	• Family, friends and high net worth individuals (angel investors)	• Founder
Dominant Theme	• Access to Resources: co-founders strategically selected investors based on access to noneconomic resources that could benefit the venture	• Autonomy and Access to Specific Resource: co-founders strategically selected investors based on access to capital, connections to other sources of capital and willingness to assign voting rights to founder	• Autonomy: co-founders developed outside sources of capital (angel and VC) but persistently chose independence
Impact on Network Development	• Staged funding required periodic reengagement and adjustment of capital acquisition network participants • Resources of VCs expanded multiple networks of stakeholders • Investors became board members and advisors to co-founders	• Continuous fundraising by founder slowed network development around other activities • High turnover in CFO • Largest investor was key to attracting other investors • Largest investors became board members and advisors to founder	• Network around capital acquisition was periodically built and deactivated
Impact on Access to Resources	• Access to large amounts of capital • Access to markets and customers • Access to experienced senior professionals for recruiting	• Access to other key investors with capital and public company experience provided by largest angel investor	• No additional resources provided
Impact on Venture Emergence	• Resources provided by investors shortened the process of emergence • Availability of capital was staged and not guaranteed and each round required a specific solicitation of investors • Each round provided only enough funding to reach a specific milestone and each milestone achieved facilitated the next round of fundraising • Considerable time was spent on capital acquisition	• Availability of capital was not guaranteed as each raise provided only enough capital to fund incremental progress • Considerable time was spent on capital acquisition and slowed execution of other key activities	• Co-founders had total flexibility and autonomy in shaping the venture • Mistakes and failures were not disastrous because capital at risk was limited • Minimal time spent on capital acquisition • The venture started small and growth occurred incrementally due to capital constraints

Table 4.4.2-1 Influence of Funding Source on Emergence of Networks and Venture

First, it is interesting to note is that the entrepreneurs in this study funded their current ventures in the same manner as their previous venture(s). An immediate conclusion is that the pattern of funding may be attributed to entrepreneurs simply leveraging relationships from preexisting networks for their new ventures. The co-founders in *Prospect*, however, pursued two different modes of funding, expending great effort to build new funding networks, and both times chose not to use those resources. Thus, simply attributing funding source to existing network contacts is insufficient. Furthermore, the building of the networks was not solely predicated on the type of resources stakeholders could bring to the table. For example, the literature often cites the non-financial benefits of outside funding such as expertise and

leads. Instead, what the evidence from this study reveals is that engagement of a particular funding source reflects how founders weighed the desire to maintain autonomy and flexibility against the mobilization of resources. Institutional investors, such as venture capitalists, require formal engagement with their portfolio companies through board seats. Individual or angel investors may be amenable to less formal types of engagement or they may see themselves as partners in the business. However, bootstrapping or self-funding offers the greatest autonomy to an entrepreneur...if you can afford it. The evidence from this study showed that the founders in all cases intentionally managed their networks of stakeholders and expressed the desire to avoid the type of investors who want to tell the founder how to run the business. The actions of *Pixel* and *Prospect* founders, however, clearly reflected an aversion to interaction with investors as partners in the business and placed a higher value on control of how the business unfolded.

When the initial co-founders of *Prospect*, for example, decided to scrap the original business concept and significantly change the venture based on market feedback, they determined that flexibility and autonomy were critical. Consequently, the co-founder who also provided seed capital acquired the interest of the angel investor. This path of capital acquisition influenced the development of the business model in that a repeatable customer acquisition process needed to be quickly attained so that the venture could generate sufficient cash flow to support growth. The co-founders pursued venture funding several years later to accelerate growth, but again decided against accepting institutional capital because of concerns about dilution of ownership and the need to perform to investor expectations. In fact, these co-founders deliberately choose not to establish an advisory board, instead seeking outside counsel opportunistically through peers and mentors in both informal and formal settings. Independence of ownership allowed the co-founders to shape the venture according to their timeline and in response to stakeholder feedback instead of building a venture based on the expectations and timeline of other investors. One co-founder admitted that although this path was initially more challenging, it unfolded as the more “liberating” path.

Coupon co-founders, in contrast, strategically sought investors with specific resources that could help the venture grow and were actively engaged with investors as business partners and board members.

Indeed, they even expanded the board to include an independent member recommended by another investor. The network they built around capital acquisition not only provided access to capital, but also provided access to advice, key executives, specific customer segments and international markets. Thus the type of funding impacted not only the networks built around capital acquisition, but facilitated all key activities with the exception of product development. Without access to these resources, the co-founders of *Coupon* admit that the process of venture emergence would have taken much longer.

Similar to *Prospect*, the founder of *Pixel* placed a higher priority on autonomy and intentionally managed stakeholder engagement around this. By seeking capital from individual investors, requiring all investors to assign their voting rights to him and limiting the board in the first five years to the largest investor, the founder was able to manage stakeholder interaction by minimizing “micromanagement” from owners. Unlike the co-founders of *Prospect*, however, the *Pixel* founder followed a specific capital path to not only maximize autonomy, but also to enable access to other potential investors. So, resource mobilization was a secondary driver. In contrast to *Coupon* and *Prospect*, the capital path of *Pixel* became an obstacle to network and consequently, venture emergence however. One explanation may be a mismatch between the chosen capital path and a business model that required significantly greater capital than could be raised from individuals and the length of time to internally generate funds due to the long R&D and sales cycle.

The comparison of cases based on source of funding provides insight into a key entrepreneurial decision, the tradeoff between autonomy and resource mobilization. Evidence from this study reveals how the capital acquisition path can impact network development and firm emergence through an activity effect (the strategy pursued by a specific activity determined network constituents) and a network effect (network constituents determined the speed of an activity). In addition, these findings raise the potentially detrimental impact a mismatch between the source of funding, the balancing of autonomy versus resource mobilization and the business model. Thus, insight into the process of network building and firm emergence provided by this variation in cases highlights an important factor that should be attended to when studying network building and new venture emergence.

5 CONTRIBUTION

The absence of a dominant paradigm (Rothaermel, Agung, & Jiang, 2007), mixed findings (Sarasvathy & Venkataraman, 2011), and limited in-depth empirical studies (Sarasvathy & Venkataraman, 2011) suggest there is room for a contribution to the understanding of how entrepreneurship unfolds. First, however, it is important to acknowledge that it was a very rich body of nearly four decades of prior research that provided the foundation for this study. In other words, this study was crafted by ‘standing on the [shoulders] of giants’ and even perhaps ‘stepping on the toes of those who came before [me].’⁷ The exploratory nature of this research contributes to the understanding of how entrepreneurship unfolds in three ways: (1) by advancing the principles of engaged scholarship to further ground research in practice, (2) by providing new insight into the relationship between entrepreneurial activities and networks during new venture emergence, and (3) by integrating an organizational path building framework with network-based research to understand how paths are built during new venture emergence. In addition, this research illuminates a path for future research in entrepreneurship that builds on these findings. The contributions are not limited to the scholarship arena, however. This research also has important implications for the practice of entrepreneurship, especially as it relates to managing the relationship between key activities and the networks that form around those activities during emergence of a new venture.

5.1 Benefits of Engaged Scholarship

Klein (1999, p. 6) makes the following observation about applied research: “If the things we learn do not have much practical value, perhaps we are investigating questions that are not important.” The most effective way to determine if what is being studied is important to practice, is to fully engage practitioners in the research process. Van de Ven (2007, p. 9) defines “engaged scholarship” as “a participative form

⁷ According to Wikiquote on 06.08.12 (http://en.wikiquote.org/wiki/Isaac_Newton), the first quote is attributed to Sir Isaac Newton in a 1676 letter to Robert Hooke. In the letter, ‘shoulders’ was spelled ‘sholders.’ The second quote is attributed by various internet sources to Dan Ingalls, Jr., a pioneer in computer programming.

of research for obtaining the different perspectives of key stakeholders...in studying complex problems.” The spirit and practice of engaged scholarship was carried throughout this research.

Certainly entrepreneurship is a complex phenomenon and, the emergence of entrepreneurial ventures with the ability to defy the likelihood of failure is a problem yet to be solved...and worthy of continued investigation. By leveraging the knowledge and experience of entrepreneurs and their advisors from the onset, the domain was bounded and a study crafted that enabled the collection of a robust set of data. Interviews from the initial sampling of entrepreneurs provided an understanding of the practice of entrepreneurship from the viewpoint of the practitioner. Access to resources was a recurring theme in these interviews, validating the importance of network research and the study of resource acquisition strategies of entrepreneurs. In fact, one participant even asked if I had contacts at the University to help in their recruiting of students with degrees in software engineering and statistics, causing me to pause and rethink my selection of a case study methodology over action research! Furthermore, framing the study around the key entrepreneurial activities defined by entrepreneurs themselves meant that interview questions required little explanation and appeared to be similarly interpreted by participants. As a result, common terminology, stories and themes emerged facilitating not only the analysis of activities within a case, but also the cross-case analysis. Thus, the application of principles of engaged scholarship enabled a research path that led to findings that will not only advance the relevant body of literature but will be meaningful to entrepreneurs seeking to improve their practice...and odds of survival.

5.2 Multiple Networks and Key Entrepreneurial Activities

This research contributes to entrepreneurship literature that addresses the entrepreneurial network, new venture emergence and the resource acquisition strategies of entrepreneurs. By approaching new venture emergence as a function of not one large firm network but many networks, this research builds on earlier research that disaggregates the entrepreneurial network in terms of different functions. Specifically, this research demonstrates the efficacy of studying the dynamics of emergence through five activities in which entrepreneurs of new ventures explicitly claim to engage to mobilize resources vital to the pursuit of goals that facilitate firm emergence. The extension and application of this approach by this

research enabled the collection of robust data that facilitated an alternate understanding of new venture emergence.

In particular, findings of this research illustrate how an activity influences network formation and dynamics in terms of the coalescence, the composition and the changing of network participants (activity effects). Without a focal activity, a network has no purpose or reason for being. Thus, the purpose or driving force behind a network, that is, the focal activity, should provide a basis for studying network development in entrepreneurial firms. Whether it is the five entrepreneurial activities identified in this research, or some modification thereof, the benefit of studying a network in terms of a specific focal activity is the rich data that enables deeper insight into how and why network stakeholders that shape a venture come to be. Additionally, the use of entrepreneur-defined activities improves communication between researchers and entrepreneurs and may lead to more practical theory.

Conversely, this research also revealed how the particular constituents of a network impacts the unfolding and the outcome of an activity in terms of strategy, speed of execution, management of resources and stakeholder engagement (network effects). Indeed, an activity that is initiated to pursue a certain goal of a young venture is enabled by the network that forms around it. Without the network, the activity has no organized way to pursue the goal. Furthermore, certain activities, or the pursuit of certain milestones that involve multiple concurrent activities, create networks that draw upon multiple existing networks to mobilize vital resources (interlocking networks). In fact, the totality of the networks that form around different activities in essence define the boundaries of a new venture during emergence, boundaries which are continuously being shaped and reshaped as the firm emerges.

Based on these findings, this research contributes an alternate view of new venture emergence that is a function of the symbiotic relationship between specific activities enacted by entrepreneurs to pursue certain goals and the networks that form around those activities. This research also contributes a new lens through which to study firm emergence in terms of the networks that form around five key entrepreneurial activities. But this is only part of the story of entrepreneurial venture emergence.

5.3 Path Building as a Framework for Studying New Venture Emergence

A second contribution of this research is to the literature on organizational path building and entrepreneurial path building. Literature pertaining to entrepreneurial networks, entrepreneurial effectuation and new technology emergence present conflicting claims with respect to entrepreneurial path building. Some speculate this conflict arises from a limited or varied understanding of path building theories (Sydow et al., 2009; Vergne & Durand, 2010). Recent literature on path dependence, path creation and effectuation were synthesized to identify a priori criteria that distinguish these modes of organizational path building. By consolidating these theories into one framework, this research contributes a foundation for a common language, understanding and mode of discernment of path building in order to advance a uniform use of these concepts in the literature. It also may change the conversation. For example, entrepreneurial effectuation, which explicitly claims to be path dependent, was originally considered a potential third category of path building. However, when the path building framework was applied, effectuation mapped to path creation, not path dependence as defined by Sydow et al. (2009) and Vergne and Durand (2011).

The use of organizational path building provided both an interesting metaphor and a disciplined format to study the unfolding of entrepreneurial activities and formation of entrepreneurial networks. The path building criteria was an effective structure for both coding and analysis of interview transcripts. In addition, when applied at both the activity level and firm level, the framework enabled a deeper insight into venture emergence. Notably, the findings in this research provide a different perspective on entrepreneurial path building than presented in much of the entrepreneurship literature. Not only was path creation identified as the initial and principle mechanism of network building, but evidence of the emergence of a second mechanism of path building, path dependence, was found in all three cases. Whether it was Divine intervention or just dumb luck, one pleasant surprise was how each case represented a different phase in emergence of path dependence as a concurrent mode of network building. Thus, an additional contribution of this research is the integration of organizational path building

into the network-based literature based on a view of entrepreneurial firm emergence as the transition from a single mode of path creation to a bimodal course of path building where path creation and path dependence coexist.

5.4 Implications for Future Research and a New Model of New Venture Emergence

Findings from this research provide texture and practical context to models of emergence and offer interesting opportunities for future research. From the perspective of scholarship, while generalizability is a key issue with the case study methodology, similar findings across the three cases illuminated issues important to understanding entrepreneurship that are ripe for further investigation. For example, the path building framework and criteria, although useful for the limited scope of this research, could be refined and expanded to include models of path dependence that differ from the one proposed by Sydow et al (2009). Past literature could be revisited using these criteria and definitions to determine if this new framework for analysis does indeed lead to a change in how path building is conceptualized in the entrepreneurship literature.

In addition, the findings of this study suggests that examining the mode of path building in entrepreneurial ventures as they progress through different milestones, may uncover new insight into entrepreneurial firm emergence. For example, do entrepreneurial firms develop one mode of network building, transition to another or engage in dual modes? Taking this one step further, can studying survival outcomes in terms of path building modalities enable the discernment of ventures that fail early from those that survive and thrive? For example, is it possible that transitioning from path creation to path dependence too early in the life of a young venture can contribute to firm failure due to premature lock-in? Or conversely, could the inability to build path dependent structures and processes result in instability that leads a young venture to “spin out of control,” waste scarce resources and die a premature death? Continuing along this line of thought, future research may also investigate whether and how a particular mode of path building affects the interplay between a focal activity and the network that forms around that activity. For example, does path dependence, with the constricting patterns of action, inhibit changes in a network that may be required to achieve the goals of a certain activity? Perhaps future research that addresses these

questions will explain or reject Schumpeter's assertion that "...everyone is an entrepreneur only when he actually "carries out new combinations," and loses that character as soon as he has built up his business, when he settles down to running it as other people run their businesses..." (Schumpeter, 1934, p. 78).

5.5 Implications for Practice for All Organizations

New insight into the emergence of young technology ventures advanced by this research also has broad practical implications for organizations large and small, new and old that seek to practice entrepreneurship and respond more effectively in a rapidly changing business environment. The incremental and intentional gathering of resources through thoughtful management of stakeholders focused on specific activities provides a disciplined model of organizational path building for entrepreneurs striking out on their own path of creating new 'things' or 'ways' in resource constrained and rapidly changing environments. But managers embedded in established organizations or large corporations seeking ways to reverse the tide of stagnation or change business practices to prevent obsolescence may similarly benefit from the example of growing ventures. The findings of this research indicate that striking a balance between processes that enable innovation and processes that manage resources and stakeholder engagement may promote entrepreneurship in an organization.

From the three cases examined in this study, five distinct paths of strategic action in network building appeared to facilitate progress and contribute to this balance.⁸ First, the entrepreneurs in this study knew what they didn't know and consistently demonstrated the humility to admit it and seek out expertise from others to fill their gap in knowledge and skills. In fact, those who worked for them viewed this as a positive attribute. Second, the entrepreneurs in this study recognized that the people they hire are not always right for every season of a firm. In other words, not everyone has the ability to adapt to change as the firm develops. Operating with scarce resources required that these entrepreneurs demonstrate the courage to make changes in the network even "wreck and rebuild" part of the organization if necessary. Third, these entrepreneurs continuously engaged others in an effort to gather critical feedback and they

⁸ On April 13, 2012, I was interviewed for an article on entrepreneurship. During that interview I shared these five insights. The article written from the interview appeared in Womentics.com on May 15, 2012.

acted on it even if it meant a material change in strategy. Fourth, the entrepreneurs in this study created an environment in which experimentation was encouraged and mistakes tolerated. Missteps and errors were opportunities to learn and improve. And finally, the entrepreneurs built their organizations incrementally, one milestone at a time, so that they could shift gears quickly and avoid squandering scarce resources (namely, people and capital) and minimize losses. Although, these practical insights do not guaranty long term success and prosperity, they did help the organizations in this study create paths that enabled them to rebound or avert 'near death experiences' that could have put them out of business much earlier in their development. After all, the objective is to find the path, or paths, that promote both viability and durability in emerging ventures.

The importance of entrepreneurial firms and established corporations to the economic health of a nation implies that findings, such as those from this study, that further the understanding of how entrepreneurship unfolds cannot be overstated or over-communicated. The importance of this body of research was underscored during testimony in front of the Senate Banking, Housing and Urban Affairs Committee on July 20, 2011. At a hearing titled Access to Capital: Fostering Job Creation and Innovation Through High-Growth Startups, Dr. Ted Zoller of the Kauffman Foundation remarked during the Q&A that "we need to talk about networks." I agree and suggest that we continue to build a path of engaged scholarship that allows us to talk more about how these entrepreneurial networks unfold to enable organizational viability and durability.

6 APPENDICES

6.1 Initial Screening Criteria for Cases

- 1) The company was founded and is currently operating in the Southeastern U.S.: Although the Southeast is home to a number of respected research universities, it is cited for its lack of funding for early stage companies and lack of mentoring from the entrepreneurial community. By selecting companies operating in a similar resource-constrained environment, I assert that mobilizing resources will require a greater emphasis on network development activities;
- 2) The company was founded no more than seven years ago: Five to seven years is generally the point where professional/institutional investors look to liquidate their investments in early stage companies through some type of sale. It is generally accepted that within five to seven years the business model should have proven to be viable enabling a return of a multiple of the capital invested. Thus, it is assumed that companies less than seven years are more likely to be in an emerging stage of growth where viability and sustainability of the business model has not been established and the company has not established independence from its original founder(s). Thus making these early stage companies a fruitful setting for the study of network formation (Santos & Eisenhardt, 2009);
- 3) One or more of the original founders is still engaged in the venture and at least one founder or senior manager is willing to participate in the screening interview: The founder or senior manager directs the growth of the company and can provide a view from inception of the venture. Furthermore, they are likely to be the individuals who actuate the network for resource mobilization;
- 4) At least one of the founders or the senior manager is a serial entrepreneur or has had previous corporate experience launching a new product: The assumption is that the more experience a founder or senior manager has had building and launching new products or services, the greater the likelihood they relied on a network of business contacts to access critical resources and the greater their appreciation for the benefits of building and maintaining a network. Although Greve and Salaff (2003) found no effect of prior experience on networking patterns, Mosey and Wright (2007, p. 932), in their longitudinal study of nascent, novice and habitual academic entrepreneurs found, that “[a]cademic entrepreneurs with prior business ownership experience have broader social networks and are more effective in developing network ties.” Furthermore Amaral et al. (2011) found in the literature the expectation that serial entrepreneurs have better network contacts. Moreover, Sarasvathy (2008, p. 46) cites recent studies that found “... organic growth leaders [managers who successfully led organic top-line growth] appear to have a great deal in common with expert entrepreneurs....” Thus, in order to study network development, it appears that a more fruitful path to

studying network formation is to study serial entrepreneurs and senior managers who have launched new products based on the assumption that they utilized and realized benefits from building a network and are more likely to do the same with subsequent ventures;

- 5) The company is a technology based, predominantly B2B company and there is commonality in terms of the line of business: The assumption is that a company that operates in a dynamic environment has a higher likelihood of relying on and activating their network to respond to changes in the environment during the time the research is being conducted. In addition, I hope to reduce other factors that may facilitate or impede growth of an early stage company by limiting the investigation to companies that focus on the B2B market since they may look structurally different than companies that sell B2C;
- 6) The company is not engaged in biotechnology: The growth of a biotech company is distinctly different from other technology companies. The R&D and regulatory approval process can take up to 10 years before it can begin the commercialization process making it difficult to study network development within the time limitations of this research. In addition, because biotechnology products are subject to intense regulation, it adds a complicating dimension to the study of how these firms emerge from a network perspective.

6.2 Interview Protocol: Initial Sampling and Case Screening

A. Pre Interview Disclosure and Consent:

- a. Research Summary
- b. Informed Consent
- c. Oral Consent to Audio Recording
- d. Definitions:
 - a. Resources: tangible and intangible
 - b. Value Proposition: what a company proposes to deliver to a customer and how the product/service is differentiated from other similar offerings
- e. Duration: 30-45 minutes

B. Preliminary Questions:

- a. What is your current title and role?
- b. How long have you held this position?
- c. What is the line of business and sector of the new company?
- d. When was the company established?
- e. Describe your professional background and previous positions you held?
- f. Describe the entrepreneurial ventures you have been involved with, the nature of your engagement and the origination of your engagement.

C. Based on the experience with your company(s), what are the key activities of entrepreneurs and emerging entrepreneurial firms?

- a. If possible, prioritize those activities in terms of importance to the creation and growth of a new venture?
- b. At what point in the creation of the new venture is each of these key activities initiated?
- c. Who has responsibility for each of these activities in your current venture?
- d. Who was responsible for these activities in previous ventures?
- e. Can you identify developmental stages of [your venture], beginning with inception or establishment of the entity?

D. Definitions:

- a. Based on your personal experience, how do you define entrepreneurship?
- b. How did/do you define success in [each of your ventures]?
 - i. How did/do you define success in terms of each of the key activities?
- c. How did/do you measure success in [each of your ventures]?

- i. How did/do you measure success in terms of each of the key activities?
- d. With respect to [your venture], what causes (d) you to lose sleep?
- e. What would or did cause you to walk away from, give up on or terminate your involvement with [your venture]?
- f. When would you consider an early stage company to be unsuccessful?
- g. How do you define failure?

E. Access to Case & Network Information:

- a. Are you willing to provide referrals or introductions to other people involved with the current venture?
- b. ...with the past venture?
- c. Are you willing to share the names and roles of individuals in your network of contacts/stakeholders associated with the current venture?
- d. ...with the past venture?
- e. What questions would be too sensitive to ask...off limits?
- f. What type of company information do you feel comfortable sharing? (i.e., financial, customers, investors)

6.3 Initial Sampling Entrepreneur Quotes and Definitions

Table Key Quotes and Entrepreneur Definitions from Initial Sampling

[illegible]

Path Building in Emerging Entrepreneurial Firms

Table Key Quotes and Entrepreneur Definitions from Initial Sampling

[illegible]

6.4 Key Entrepreneurial Activities

This list represents common activities described by thirteen founders of early stage technology-based companies. Data was collected during interviews conducted from May through July 2011. The founders were identified through direct relationships or referrals from business professionals who engage with the entrepreneurial community in the Southeast US. The companies these founders are associated with were screened using the criteria in Appendix 7.2.

1) Creating a unique value proposition...developing a 'great formidable idea':

- i) Where is the market going
- ii) Who are the potential customers
- iii) What is the problem to solve
- iv) Identifying product/market fit
- v) What is the need we can fill
- vi) Bottom up approach

2) Capital acquisition...making sure there's enough money:

- i) Identifying where capital will come from
- ii) Fundraising

3) Talent acquisition...getting the right people on the bus:

- i) Recruiting to build the right culture and deliver the vision
- ii) Seeking advisors and mentors
- iii) Hiring domain experts and product developers
- iv) Recruiting the senior team and letting them recruit downward
- v) Hiring sales and finance

4) Establishing repeatable customer acquisition:

- i) Selling the idea
- ii) Getting customer buy-in
- iii) Sales, marketing and PR

5) Product development...from a minimally viable product to a product able to accommodate growth:

- i) Begin with a quick, simple and inexpensive product
- ii) Test it, experiment with customers
- iii) Tweak, adjust repeat
- iv) Build a hypothesis, challenge it, tear it down

- v) Continually throw ideas against the wall to see what sticks
- vi) Striving to stay ahead of the market and competition

6.5 Interview Protocol: Founders

A. Pre Interview Disclosure and Consent:

- a. Research Summary
- b. Informed Consent
- c. Oral Consent to Audio Recording
- d. Definitions:
 - i. Resources: tangible and intangible
 - ii. Value Proposition: what a company proposes to deliver to a customer and how the product/service is differentiated from other similar offerings
- e. Duration:
 - i. Founder Interview #1: 60-90 minutes
 - ii. Founder Interview #2: 60-90 minutes

B. Background

- a. **Founding Team**
 - i. When and with whom was the company established?
 - ii. How did the relationship between co-founders originate?
 - iii. What resources did each of the founders provide and what role did each assume?
- b. **Other Founding Contributors**
 - i. Aside from the original founders, who else was vital to establishing the new firm?
 - ii. How and when did their involvement originate?
 - iii. Why was their input or involvement important?
- c. Are each of these individuals/organizations still involved with the company?
 - i. If not, when did that occur and how did that affect access to resources or individuals?
- d. Were there individuals/organizations and resources that the company could not gain access to?

C. Activity 1: Developing a Unique Value Proposition

- a. What is the value proposition?
- b. When and how did the company create the value proposition and the product offering?
- c. Who is/was involved in the creation of the value proposition & product conceptualization?
 - i. What is/was their role and how did the relationship originate?
 - ii. Why is/was their input important?
 - iii. Are they still involved in the company?
- d. Who or what are/were the resources and people/organizations that are/were the most difficult to access and what were the specific impediments to accessing those resources?

D. Activity 2: Capital Acquisition

- a. How and when did you identify the capital needs for the new venture?
 - i. Who is/was involved and what resources did they bring?

- ii. How and when did the relationship originate?
 - iii. Are they still involved in the company?
- b. What was the source of seed money for the firm? (if self funded, go to e.)
 - i. How and when did the relationship with each seed investor originate?
 - ii. Why do you think they committed to the new venture?
 - iii. Were there any potential investors who did not invest?
- c. Were there subsequent rounds of external fundraising? (if no, go to f.)
 - i. How and when did the relationship with each investor originate?
 - ii. Why do you think they committed to the new venture?
 - iii. Were there any potential investors that did not invest? (if no, go to vii)
 - 1. Who were they, why did they not invest and when did this occur?
- d. What were the challenges to identifying investors and gaining commitment for subsequent rounds?
- e. How did inclusion of later round investors impact the relationship with seed/founding investors?
- f. When an investor wanted to liquidate their investment, when did this occur and what impact did it have on the company's access to vital resources or individuals and on performance?

E. Activity 3: Talent Acquisition

- a. How did you identify and recruit experts and talent to the company?
 - i. How and when did the relationship originate and what roles were being recruited?
 - ii. Were there individuals/organizations that declined to be involved or couldn't be accessed?
 - 1. Who were they, why and when did this occur?
 - iii. Has there been a situation when vital talent/expertise left the company?
 - 1. When did this occur and what impact did that departure have on the company?
- b. Does/did the company have one or more Boards?
 - i. If multiple boards, what is/was the purpose/role of each board (i.e., formal vs. advisory)
 - ii. Who are the Board members and how did the relationships with board members originate?
 - iii. Why did they join and what resources/access do/did they each provide?
 - iv. Where there individuals who declined a position on a board?
 - 1. What was the reason and when did this occur?
 - v. Are there board members who are no longer serving?
 - 1. When did their involvement end and why?
- c. What were the impediments to attracting key talent or persuading someone to come on board?

F. Activity 4: Establishing Repeatable Customer Business

- a. Who has responsibility for customer acquisition?
 - i. How and when did this relationship originate?
 - ii. What resources do they bring to this effort?

- b. Did any of your customers help gain access to other potential customers?
- c. Has the company been nominated for and/or received business awards?
 - i. If so, who and when were you nominated and what was the award?
 - ii. What did the company gain from this effort?
- d. Are there individuals/organizations key to gaining customers who ceased involvement?
 - i. When did their involvement end and why?
 - ii. What impact did this have?
- e. What has been the greatest challenge to gaining repeatable business from customers?
- f. Was there a time when the company could not attract enough new customers to stay in business?
 - i. When did this occur and what was the impediment?

G. Activity 5: Product Development

- a. Who has been responsible for product development?
 - i. How and when did this relationship originate?
 - ii. What resources do they bring to this effort?
- b. Who else and what other resources are vital to this activity?
 - i. How and when did these relationships originate or were these resources accessed?
 - ii. Why were they important to this activity?
- c. Are there individuals/organizations key to product development who ceased involvement?
 - i. When did their involvement end and why?
 - ii. What impact did this have on the company?
- d. Were there resources or individuals/organizations critical to this activity that the company was not able to access and what was the impediment to this access?

6.6 Interview Protocol: Non-Founders

This protocol will be used to collect data on one specific activity with which the participant has been identified.

A. Pre Interview Disclosure and Consent:

- a. Research Summary
- b. Informed Consent
- c. Oral Consent to Audio Recording
- d. Definitions:
 - i. Resources: tangible and intangible
 - ii. Value Proposition: what a company proposes to deliver to a customer and how the product/service is differentiated from other similar offerings
- e. Duration:
 - iii. Network Actor/Stakeholder (non-founder): 30-60 minutes
- f. Note: Questions to network participants will be framed in terms of the specific key activity with which they were associated
- g. Note: 'Other Informants' refers to actors related to a case that were not specifically identified with an activity-based network, but are able to corroborate information provided by other case participants

B. Describe the origination of your relationship with the company:

- a. When and how did you become involved with the company?
- b. Why did you decide to become involved with the company?
- c. What was your expected contribution in terms of resources or contacts?
- d. Was your involvement with the company formal or informal (i.e., contractual)?

C. Are you still active with the company?

- a. What was/is your role in the company?
- b. If no, when and why did you stop being engaged?
 - i. Do you still maintain relationship(s) with anyone associated with the company?
 - ii. What is your current principal occupation?

D. What were the specific resources or contacts you delivered to the company?

- a. How and when did this occur?

E. What were the challenges or impediments that were encountered in accessing resources and achieving goals associated with this activity?

Can you recommend and facilitate an introduction to other individuals associated with the company that might be helpful in understanding how the company grew

6.7 Detailed Path Building Narrative: Coupon

Capital Acquisition:

Initial Conditions: Neither co-founder contributed capital to the new venture. Both co-founders had broad networks of senior people in corporations nationwide; however, one co-founder's network was of particular importance ("When it came to fundraising, his network was fantastic"). Having been a former venture capitalist, this particular co-founder had access to the venture capital community not available to most pre product and pre-revenue entrepreneurs. With such strong access to the VC community, the test of the viability of their idea was whether they "could actually raise money against it."

Instigating Event: The co-founders developed their "pitch" the first month and began scheduling meetings through their network. Over the next two to three months they met with 10 to 12 VC firms, including the former firm of the co-founder and another firm that the co-founder knew through joint board positions.

Drivers: Time was of the essence in getting to the market first with this concept. With the particular business model they created, the co-founders knew they would not be able to get the attention of major corporate clients without institutional financial backing ("...so we talked to people...but three minutes into the conversation, "So how much money have you raised..."). So, they were motivated to quickly get to the business model that had the most appeal to institutional investors ("...we knew from day one that if we did not have major investors behind the company, no [customer] was going to engage us."). At the same time, they were careful to pursue investors who would provide capital with minimal interference ("what you don't want is an investor who's going to tell you how to run your company. You want an investor whose going to be supportive...") so as not to slow down the process of building the company ("we were very focused on what were the things that let us move fast and what were the things that slowed us down and avoid them at all cost.") and thus, concentrated their efforts on raising capital from those VCs they knew "incredible well" because "that made the process easier." Once the product was launched, the co-founders cast a wider net in subsequent fundraising efforts in order to identify strategic investors who could provide access to markets that they did not have or who could accelerate the

penetration of a market. The co-founders took a strategic and incremental approach to fundraising seeking investors who could provide them with the resources they needed for a particular point in the development of the venture but only raising enough to get to the next key milestone (“...you have to get to your next key milestone before you run out of money or you die.”).

Stakeholder Engagement: From the onset, the search for investors to commit to the venture included not only the engagement of direct relationships with potential investors, but tapping into their network to identify connections to potential investors principally through contacts who were entrepreneurs that received VC funding. Although, the first two institutional investors had a prior relationship with one of the co-founders, the co-founders also began building a relationship with a third firm who they came to know through another entrepreneur and former VC partner because of geographic proximity to the new venture. As the strategy of the new venture developed and gaps were identified in their resources, a senior member of their leadership team introduced them to the third round investor who had expertise and access to a segment of the market they identified as a gap. This investor and board member quickly became their “hardest working sales guy.” Similarly, when international opportunities began to emerge, they sought a fourth round corporate investor who could provide not only funding and access to potential customers, but facilities and employees to help develop global opportunities. All the investors became board members and trusted advisors providing access to more than just financial resources, but also to members of the senior management team, an independent director and customer segments and new markets as needed based on the development of the venture. The co-founders did not report being constrained by their investors, nor did they feel pressure to build and sell as is the stereotype for institutional investor engagement (“The exit does not seem to be a motivating factor...they all seem to be very patient with their time lines, none of them are pushing us.”).

Contingency Response: The co-founders took advantage of unexpected opportunities and information that arose from investor engagement. This manifested in the form of new and valuable relationships. During the first round of fundraising, one potential VC required the co-founders to bring in a VC within local geographic proximity to serve as the contact for the other distant VCs. Although, the cofounders did

not pursue funding from that particular firm, as a result of those negotiations, they identified a local firm with important synergies that eventually became an investor and important mentor to the co-founders. During the third round of fundraising, potential investors repeatedly compared the business model of the new venture to that of a company in another industry. Picking up on that cue, the co-founders decided to recruit for their senior management team from that company's network of current and former employees.

Scope of Action: The cofounders were disciplined and strategic in their actions when it came to raising capital (“...the thing we always try to solve for is to get to the next milestone...”). They raised funds incrementally based on the next near term goal (“...part of it is planning what’s the next milestone”) and, as a result, were deliberate in who they engaged while raising capital and from whom they received their capital infusions (“...we raised very little money, just enough to get this going”). One co-founder described the nature of their actions as follows: “ ...you tend to get insanely focused on hitting the milestone and you get very protective of anything that’s getting in your way from doing it.”

Outcome: The strategic and incremental approach to fundraising allowed the co-founders to maintain control of the process of building the new venture by managing the fundraising network to gain access only those well-defined financial and other resources offered by investors that were critical to achieve the “next milestone.” The resulting limit on the number of decision-makers and sources of feedback enabled the new venture to pursue each consecutive milestone quickly, however, it also served to constrained the building of the venture in that “everything is stretched...everything [employees] do is being done on a shoestring.”

Development of Value Proposition:

Initial Conditions: The new venture was started with no capital, no employees, only an idea based on two major industry trends they observed while working at their previous employer. It appeared to them that no one was attempting to capitalize on these trends to create a business (“no one is doing anything with it.”) The co-founders believed there was potential for a viable business model (“there is a business

model there...”). The question they asked themselves was: “How do you put this together in a meaningful way?” The path was unknown (“frankly, we were not sure if we could build a business, we were not sure how to do it...”).

Instigating Event: “Pretty convinced [they] had a good idea,” they reached out to “their senior network” and “just started talking to a lot of people.” They crafted a “half dozen business models they thought would work.”

Drivers: The co-founders were motivated to identify the business model “that would make sense to investors” because “[the co-founders] knew from day one that if [they] did not have major investors behind the company, no [customer] was going to engage...” The positive feedback they received from their “senior network” (“And...frankly, we generally got a pretty good level of excitement.”) provided the momentum for further refinements of the business model.

Stakeholder Engagement: The co-founders simultaneously tested the ideas with individuals from each of their existing professional networks: (1) potential investors, to see if they could raise money and (2) potential customers or those who worked with potential customers, to see if there was a market for the product (“...two things we did simultaneously to test the value. The first was, see if you could actually raise money against it....the second was calling up all the senior [customer] people we know and saying, “Hear us out, what do you think?”...it was not a sales call...but those were the ways we sort of validated could this idea have some real feet...”; “We talked to a lot of people that served those customers...if we came to them with this type of product, what would they think about it.”).

Contingency Response: No findings.

Scope of Action: The co-founders thoroughly vetted the concept for the new venture with senior level professionals drawn from their respective professional networks before hiring employees and building the

technology. Their personal investment in the new venture was limited to time and minimal financial resources for travel for meetings to pitch the idea.

Outcome: Based on feedback from this new network of advisors created from their existing professional networks, the co-founders were able to craft a business model that enabled them to raise institutional capital and create interest from potential customers, which in turn, allowed them to pursue the next milestone in the building of the new venture. Thus, this activity provided the beginnings for development of networks focused on fundraising and customer acquisition. As one co-founder noted, the outcome of this activity validated their starting point and refined the vision: “I don’t think we ever evolved the core value proposition. I think we definitely made it smarter and more precise and more elegant...” (“I don’t know if we were smart or lucky. Probably lucky. I could pull out our original investor presentation from April 2008. It looks identical to what we do today.”).

Talent Acquisition & Management:

Initial Conditions: Although the co-founders drew from many individuals in their existing professional networks to vet the idea and raise capital, the new venture initially consisted of just two employees, the co-founders. In building the network of talent and those who had access to talent, the co-founders initially were constrained by contract from hiring people they knew and trusted from their previous employer for first two years. Additionally, the establishment of the new venture in a city where the co-founders had neither lived nor worked limited the ability of their existing network to facilitate the search for talent. As a consequence, with no capital, no product and no recruiting strategy, the challenge was to attract talent to the new venture by seeking “people who really get compelled by the vision and want to be part of something like this” because according to one co-founder “the only currency you have to trade in the early days is a vision that we could build something great.”

Instigating Event: Hiring at the new venture followed fundraising (“We didn’t have an employee until after we got the money”). Once the first round of capital was raised the co-founders recruited developers to build the prototype, then recruited the sales organization to find customers. Each successive round of

capital raised and milestone attained reignited the search for talent. (“...after we raised the next five million...we started bringing...a broader set of skills into the business.”)

Drivers: The recruiting and retention of talent to the organization was driven by four precepts of the co-founders: (1) associate with individuals that would enable the new venture to quickly achieve the next milestone (co-founder: “...we often thought people were slowing us down...we had an idea, we knew what it was and we were just trying to move very fast”), (2) engage individuals who could fill gaps in expertise and access to resources (member sr. leadership team about the cofounders: “they knew what they didn’t know” and “And that was important for me to know that they actually recognized what they didn’t know and they needed somebody who could fill that void for them.”), (3) performance manage and recognize that changes in the business may necessitate changes in talent because “[h]uman beings can’t always scale as quickly” as a business (co-founder: “in a new company...people each have their own season...most of the people you get in the early days of the company don’t belong in the season we are in now” and “people aren’t bad, but the positions aren’t right for them”), (4) maintain the chemistry or cultural fit that facilitates the agenda of the new venture and the co-founders at all levels of the organization (co-founder: “we were careful to make sure we brought the partner from the Series C investor that we thought would most gel with the existing board members.” Member of senior leadership team: “...this was a culture that was going to work for me...we want to make sure that every person we add to the equation at this point in a company this small doesn’t upset that in any way”).

Stakeholder Engagement: Initially, the co-founders relied a multitude of tools and sources to identify talent for the new venture, both from network and non-network sources. Their investors referred members for the senior leadership team who they know from previous portfolio companies, they sought referrals from their existing professional network, utilized recruiters, career fairs, job boards and social media for sales and technology hires. With little capital and high risk, the co-founders recognized that “the only currency you have to trade in the early days is a vision that we could build something great.” Therefore, the recruiting efforts appealed to candidates with entrepreneurial desire and appetite for risk (sr. exec: “I think my heart and drive comes from building things” “ it was never about coming for the salary or the day

to day comp plan. This was about wanting to finish my career building something...). All employees became owners in the new venture and thus, had a stake in any future success that would flow from their efforts. And as the venture grew, it was able to leverage the reputation of existing employees and board members to attract individuals who trusted them.

Contingency Response: The co-founders were quick to respond to unexpected results and changing needs by reworking and expanding their network to seek solutions. They replaced almost all the original product development team, though proficient at fast prototyping needed in the early years, was not able to adapt to the needs for structure and scalability required once the company had customers ("We got talent that got the job done and that we could afford..."; "They were quirky...they were a great little team. And yet they were excited about the vision...they were people that generally would not have fit in big corporations...the problem we had almost universally with that team is when we got just a little bigger and we had to have a little bit of management structure in place and a little bit of process, they sort of started dropping and being ineffective."). The co-founders similarly replaced the head of sales and most of his sales team when they realized that "he didn't know a darn thing... his network and his sales experience, his sales skills were all wrong." So, they hired a recruiter to find candidates with experience from a company they had heard about during their fundraising efforts that had a similar business model in a different industry. The resulting new head of sales and new sales and support team he was able to recruit largely with a similar background was critical to developing and executing an new strategy and achieving the next milestones of the new venture.

Scope of Action: The co-founders were diligent in managing the network. According to one co-founder "I do think a way to crush a new company is to get too much of a network around it because they take time...because managing all these relationships and knowledge and all these people "helping you" takes time. And so I think we've been lucky in terms of we've generally gotten new relationships to broaden our network when we were ready to handle it." Limited by funding and driven to achieve the next milestone before they ran out of capital, they recruited incrementally and purposively those they could afford and those who had expertise and resources they did not possess. The cofounders built the network of talent

slowly and “did not rely on a lot of expert folks around us to get the business going...we often thought people were slowing us down....we were just trying to move very fast.” “For the first couple of years...we, frankly, didn’t want other senior people around. We didn’t want them muddying the water in terms of where we needed to go.” As aggressive performance managers, they were willing to “wreck and rebuild” the network as the talent needs of the new venture changed or if results slowed growth. One co-founder is known for “accidental firings” but as the other co-founder noted, “ I can’t think of one mistake we’ve made there. I do think, generally, we’ve erred in not letting [co-founder] accidentally fire people a little sooner.” This pragmatic approach to managing the network of talent has been adopted by the senior management team. As one sr. exec stated “We’ve been....really good...taking out people that just don’t fit or can’t carry their weight or just personality-wise don’t fit...the sword swings fast, fast and hard.” They implemented this strategy, however, in an environment of honest and open communication, so expectations are clear with employees and separations were generally amicable where both parties agreed, “it’s time.” As the sr. leadership team was put in place, the co-founders have slowly released recruiting and management of talent to the senior management team and encouraged a shift in focus from the hiring of specialists to recruiting the “natural athlete” because as one sr. exec described the philosophy of the co-founders, “you don’t know where the next problem is coming from. So, if you hire someone to do something specific, it doesn’t really work because tomorrow we are doing something different.”

Outcome: One co-founder describes the transition in identifying talent from “what we could find”, which was often through non-network social media and internet-based sources, to organic growth through referrals which led to more growth through referrals.” One co-founder admitted that talent acquisition is their “biggest constraint to growth.” The willingness of the co-founders to dynamically manage the talent network enabled them to change course and achieve their immediate milestones in spite of the shortage of resources. The open and honest communication and unambiguous action has created a strong culture and a sr. leadership team committed to maintain that culture: “...we want to make sure that every person we add to the equation at this point in a company this small doesn’t upset that in any way.” The co-founders and senior leadership team, however, recognize the need for a more structured recruiting

strategy (co-founder: "we haven't had a recruiting strategy. We've been able to sort of find the talent based on basically who we know and the occasional recruiter... I know that's not sustainable but that's how we kind of got to this point...Going forward we need a recruiting strategy...we probably need someone in the company whose primary role is to think about recruiting..."). Structure around recruiting is not only needed to add headcount to support growth but to address three specific challenges in the network: (1) the growing need for management (sr. execs: "you bring some really smart, really senior people as part of the leadership team and then you hire a bunch of the least expensive and most talented people you can hire to do all the work, but at some point you have this one person who is trying to manage this massive amount of work"; "We're having to build spans...layer the management structure now."; "...we have all the Chiefs and we have all the Indians. Well, the Chief now has to be everywhere and the Indians are getting bigger, bigger, bigger, bigger and the Chief can't be everywhere so everyone is becoming ineffective."), (2) the lack of diversity in terms of experience and ideas (sr. exec: "We have a seasoned and talented team by default") because they were able to attract individuals who could tolerate the career risk and the financial risk (sr. exec: "it's not that we don't have headcount open, it's the challenge of hiring here...we're not exactly paying market level for a lot of these positions"; "...this was going to sound trite, but I've got to find people who are living well below their means.") and drew upon their networks of candidates who worked for the same companies (sr. execs: "we need to go find people that already had these skill sets, which quite frankly, led us back to a lot of people who had at some point in time...worked for [company with similar business model]"; "...we've changed our direction in terms of the next wave of recruiting...we don't want to become [a company they recruited heavily from]. We realize we need a breadth of experience here, so we're really trying to broaden out our background..."), (3) the shortage of technology and analytical talent in the city in which they are located and limited network to connect them to that talent ("It's very difficult getting people here."; "...even though [the co-founders] have fantastic networks, when it came to hiring in [city where the company was established]...it was not through our network because our network is very national and very senior. And so when it came to finding our first developer in a state we hadn't even lived in, I think that's important to know."

Product Development:

Initial Conditions: At inception of the new venture there was no product, no employees just an idea. According to the co-founders, “ we were first movers in this space. We invented it.” Although they were able to design the core product and write the requirements, they had to find the people to build the technology. However, their national network of senior business professionals “was not helping us hire our first couple developers...”

Instigating Event: After raising the first round of capital, the co-founders set out to hire a team of developers to build a prototype for piloting as quickly as possible (“We didn’t have an employee until after we got the money.”). The co-founders used social media and online job boards to source their first technology hires. And what they found were “classic early stage developer[s]” capable of writing huge amounts of code for fast prototyping. Which enabled them to begin piloting the technology with a small number of customers. At the same time however, the co-founders were fully aware that these individuals and their product would not last an increasing need for product scalability, organizational structure and accountability to customers.

Drivers: (1) Initially this activity, driven by the need for fast prototyping to serve a few number of customers to prove viability and justify the next round of funding, (2) as the number and size of customers grew the increased accountability and responsiveness to customer requirements required greater organizational structure and process around product development; (3) Similarly the growth in the organization as other functions building out (sales, marketing, analytical support), increasing sources of input into product development

Stakeholder Engagement: It was in this activity that perhaps the most diverse network of stakeholders has arisen. Beginning with a few developers and oversight by co-founders, grow of the customer base necessitated a change in the nature of the technology expertise from developers who could build fast prototypes to professionals who could build a product that could accommodate growth and be responsive to customer technical requirements. As the organization itself grew, employees from different functions, sales, marketing and analytic support also joined the network to provide input they received from

customers and ideas they crafted to address objections from prospective customers. Product development became an organizational wide activity.

Contingency Response: See Talent Acquisition

Scope of Action: For the first two years product development was micromanaged by the co-founders: “And so it was our product and we, frankly, weren’t terribly open to suggestions. Not because we were being jerks but we had a very specific thing we wanted to go do...” Growth of the new venture, however, meant an increasing number of stakeholders from across the organization engaging in this activity to address customer demands and new ideas. Facing more ideas than technical people to build those ideas into the product, a more inclusive decision-making process and protocol for prioritization of product modifications has emerged. “[Y]ou have stakeholders from each of the major areas saying this is what we’d like to build. We put a priority on it based on the estimated value and the estimated time it’s going to take and then company-wide we say here’s what’s going to be in our next release and that decision is made with [the co-founders] and all the executives in the room...then we actually hand it over to the product folks...”; “and there’s a lot more input that comes from a lot of different areas, it’s much more a decision-making process and, frankly, it’s all about prioritization...”; “I feel it’s pretty wide open from creating the analytical products. I don’t feel any constraint around that at all.”; “We’re creating a path. It’s really an open field or an open slate from what needs to be analytically.”)

Outcome: Increasing stakeholder engagement has extended decision-making authority beyond the micromanagement of the co-founders that marked the early years to other members of the sr. leadership team who bring feedback from customers and prospective customers and creative solutions to problems. However, this increased stakeholder engagement has been encompassed in a decision making process that entails prioritization of action.

Customer Acquisition:

Initial Conditions: The co-founders had a strong network with one customer segment with which they consulted early on to vet the initial idea. However, because they were creating a new business (“...no one new how the ultimate end user was going to react”), so finding that first customer was a challenge (“...actually we didn’t know how people were going to react...”; “...the biggest question all along was will people just freak out?”; “Nobody wanted to be first, everybody thought it was a great idea...”).

Instigating Event: The first round funding and availability of a prototype enabled the co-founders to seek a small number of potential customers to pilot the technology. The first pilot came from the existing network of senior professionals (“... so one of my closest confidants and mentors...actually ended up being our very first test...So our very first customer moved very quickly...”). Similar to the case with fundraising, building this network with individuals who new and trusted the co-founders hastened the progression of this activity (“They’re buying the founders when you’re this early...they bought two people that they think will deliver...”). With a product in hand, the co-founders also began building the sales team to develop opportunities with customer segments they did not have expertise or relationships in.

Drivers: (1) This activity was driven by the need to get to the next “milestone” to prove the business model to both existing and prospective institutional investors for the next round of institutional funding. While the first round of funding enabled them to get to the testing phase, the cofounders knew that in order to get to the second and subsequent rounds of institutional funding, they would need to successfully pilot the technology and demonstrate customer acceptance and the ability to build out the customer base in all segments. In this sense, a principal driver was the need to raise capital quickly, but incrementally while the company was not generating sufficient cash flow to be self-sustaining. (2) A second driver was the desire to acquire a “marquee name” customer to help drive business from other segments to build out the customer network (“they need national scale, meaning you have presence in every state...the second thing you needed frankly was a marquee name...for [customers] to stand up and take notice and actually pay attention to what you are saying.”; “in our gut we knew we really). (3) Finally, this activity was driven by the need to get to an effective sales strategy and sales organization, especially to address the customer segments that the co-founders had neither the expertise or professional network (“...it was

introductions to the side of the business that we didn't have a strong network with"; "...so we had to go out and find people who were consultative salespeople who understood how to sell data..."; trying to accelerate a sales process and a growth of a marketing service company"; "they are literally going to help us expand internationally to all the major countries in the world frankly in a much faster rate than we could ourselves...").

Stakeholder Engagement: This activity spanned multiple networks. Third and fourth round investors were strategically selected because, in addition to financial resources, they provided networks that could facilitate access and expertise to customers and markets. Existing customers understood that helping to build the customer base meant the new venture could expand its product offerings much quicker, so they provided references and credibility to help the sales effort. In fact, the largest customer actually assigned sales executives to joint call with the sales team of the new venture in order to facilitate new customer acquisition ("And they're helping us build the [customer] network...It changes the nature of the conversation...it's amazing and it's not a contractual thing and we don't pay them for it"). In addition, employees from the technical and analytical teams were engaged as part of the sales process to directly address objections or problems raised by existing or prospective customers both in the field and in the office. But this network was not static. "Course corrections" required replacement of the original sales team. New solutions to address objections of potential customers, meant new segments of customers could be developed which required sales associates with different sets of skills ("[prospective customer] forced us to re-think a secondary business model that we never envisioned...could be a pretty significant second set of side business for us..."). Rapid growth of the customer base meant the venture was constantly seeking to recruit technical and analytic expertise to support the expanding sales organization ("...if you don't have all those [customers]...engaged with tech resources, they're never going to convert..."; "...I'd love to have an analyst who is...in the field working with my team to go on meetings on a regular basis..."; "it's not that we don't have headcount open, it's the challenge of hiring here...we're not exactly paying market level for a lot of these positions").

Contingency Response: With respect to this activity, the new venture has demonstrated the agility to rebound and leverage the unexpected. The co-founders replaced the original head of sales and most of his sales team when they realized that he was a “complete mismatch” and “he didn’t know a darn thing... his network and his sales experience, his sales skills were all wrong” and “they weren’t selling anything.” So, they hired a recruiter to find candidates with experience from a company they had heard about during their fundraising efforts that had a similar business model in a different industry to “wreck and rebuild” the sales organization. The new head of sales (brought on even before they fired his predecessor) and the sales and support team he was able to recruit from his network, were critical to “restating what the business was about” by executing an new strategy and accelerating the pace of growth (“We completely changed the way we were positioning the product...”; “...they’ll be writing textbooks about how we did this because we’re trying to accelerate the sales process and a growth of a marketing services company from zero to 100 miles an hour by just skipping through all the gears...”; “the network is growing everyday, so we’ve survived through that point, but that was certainly the biggest challenge.”). In another instance, the sales team encountered objections in the market that prevented them from winning the largest accounts in a market segment. The sales team decided that one prospect in particular was “too big a client to just say, “Oh well, you can’t win them all.” So a team of six met for an entire day to try to find a solution for this specific situation. What they crafted was a solution that led to “a secondary business model that we never envisioned and it had never really been thought of relative to the revenue potential to this business...could be a pretty significant sort of side business for us.”

Scope of Action: Although their actions were critical to initiating this activity early in the venture, the release of control to other members of the leadership team is most evident here. The co-founders are focused on results and less on strategy. Strategy is changed when needed, as are people to execute the strategy. The co-founders maintain oversight and “are on the road all the time” to remain “plugged in to what challenges our sales guys are facing.” But the co-founders appear to have turned over responsibility to those who have the networks and expertise by allowing them to rebuild the sales strategy to grow the company. Again, with their actions are focused on getting to the “next key milestone before they die”, it is notable that the co-founders have instilled discipline with respect to the type of customers

the venture pursues. The sales effort is focused on those customers who can add value, such as customers with a “marquee name”, avoiding smaller customers in certain segments who “just can’t move our needle” or prospective customers who demand product changes that would diminish the value of the business model (“...we could not let [a small company] set a precedent...they could literally destroy the value...So, we said, “Sorry, we’re not going to do it.””).

Outcome: Because resources are stretched and the venture is seeking to scale rapidly, they have not been able to develop a repeatable customer acquisition process (“we’re building and running at the same time...it’s hard to get down a repeatable process this early in our life cycle...it’s the instability of a new company and our processes until we get those gaps filled we have to work around them so that we can deliver to our [customers] what we’re saying we’re going to deliver.”). Conversely, the lack of processes and structure in this activity has allowed members of this activity network to opportunistically devise innovative solutions to problems and open new segments of the market to the new venture.

6.8 Findings by Activity and Path Building Dimension: Coupon

Path Building Dimensions	Activity 1: Capital Acquisition	Activity 2: Development of Value Proposition	Activity 3: Talent Acquisition & Management	Activity 4: Product Development	Activity 5: Customer Acquisition
Initial Conditions	<ul style="list-style-type: none"> Established June 2008 by 2 co-founders No capital, no product, no employees Just an idea, experience and networks of co-founders including network of contacts at VC s 	<ul style="list-style-type: none"> Co-founders identified emerging trends in the industry and recognized an opportunity for a new business , but specific business model not identified 	<ul style="list-style-type: none"> Constrained by contract from hiring previous employees Limited local network since co-founders established venture in city in which they had neither lived or worked Limited capital, no product, no recruiting strategy, only a vision to offer 	<ul style="list-style-type: none"> No product, no employees Existing network not a fruitful source of talent 	<ul style="list-style-type: none"> Co-founders had strong network with sr. managers with one segment of customers No sales team, no product Concept vetted prior to first round with potential customers and network professionals who worked with potential customers First two rounds of funding occurred with no customers Unproven business model, no one wanted to be first to launch
Instigating Event	<ul style="list-style-type: none"> First month co-founders developed "pitch" Next 2-3 months co-founders presented to 10-12 VCs Idea refined after each meeting 	<ul style="list-style-type: none"> Co-founders presented idea and solicited feedback from within their network of business professionals 	<ul style="list-style-type: none"> Hiring followed fundraising First employees hired after first round of capital Successive rounds of capital reactivated talent search 	<ul style="list-style-type: none"> Following the first round of fundraising, the co-founders recruited developers using social media and online job boards to build initial prototype for piloting with a small number of customers 	<ul style="list-style-type: none"> Prototype enabled co-founders to pilot technology Co-founders focused on potential customers who knew and trusted them First pilot was mentor and long time friend of co-founder Pilot enabled venture to begin building sales team
Drivers	<ul style="list-style-type: none"> Being first to market Money (other specific resources) not micromanagement Pursuing one milestone at a time Achievement of previous milestone Institutional backing required to attract large clients 	<ul style="list-style-type: none"> Fundraising depended on identifying the value proposition and business model that attracts investors Positive feedback from their network provided momentum to proceed with raising capital 	<ul style="list-style-type: none"> Associate with individuals who would enable the new venture to reach the next milestone quickly Engage individuals who could fill gaps in expertise and access to resources Recognize that performance and changes in the business may necessitate changes in talent Maintain the culture and chemistry that facilitates the agenda of the new venture and co-founders 	<ul style="list-style-type: none"> Need for fast prototyping to begin pilot programs Need for structure and process to provide accountability and responsiveness to growing customer base Need for structure and process to absorb increasing sources of input from multiple functions with venture 	<ul style="list-style-type: none"> Subsequent funding tied to market acceptance and sales in all relevant customer segments Need engage major corporation as customer in order to attract other customers Need to develop effective strategy and sales organization to address gaps in networks and expertise of co-founders Focus on customers who add value and do not dilute resources
Stakeholder Engagement	<ul style="list-style-type: none"> Co-founders contacted potential investors who were direct relationships and through contacts who were entrepreneurs who received VC funding First 2 VCs had prior working relationship with one co-founder Initially engaged potential and committed VCs in development of idea Later engaged VCs in development of customers and markets All investors have board seats Investors provided input for sr. leadership team and board Certain investors became mentors 	<ul style="list-style-type: none"> Co-founder simultaneously tested the value proposition with individuals in their network who were: (1) potential investors to see if they could raise money against the concept and (2) prospective customers or business professionals who worked with prospective customers to see if there was a potential market for the product 	<ul style="list-style-type: none"> Used a multitude of tools to identify talent: social media, internet, recruiters, network of business professionals, investors and other employees Sought talent outside relevant industry Appealed to entrepreneurial drive All employees became owners Co-founders increasingly engaged employees in development, execution of strategy and creation of solutions Open and honest communication around performance expectations 	<ul style="list-style-type: none"> Original team of developers recruited for fast prototyping operated in an unstructured environment guided by input from co-founders Original team unable to adapt to increasing need for structure and changing product requirements and was largely replaced All functional areas are engaged in delivering feedback from customers and ideas to address market challenges Sr. leadership team prioritizes product modifications 	<ul style="list-style-type: none"> Spanned multiple networks Subsequent investors strategically selected to facilitate access to customer segments and markets Largest customer joint called with sales team to facilitate closings Other functional areas of venture engaged in sales effort on calls and development of customer solutions Ineffective sales strategy lead to replacement of sales team
Contingency Response	<ul style="list-style-type: none"> When potential VC required co-founders to find local VC to participate: even though the out-of-town firm was turned down, the local VC identified became third investor and close mentor During fundraising, potential VCs compared new venture to existing company in another industry: the new venture eventually recruited for sr. leadership team from that company's network of current and former employees 	<ul style="list-style-type: none"> No findings/data 	<ul style="list-style-type: none"> Original product development team, though proficient at fast prototyping, was not able to adapt to need for structure and scalability as customer base grew; substantially all members replaced Original sales team could not develop revenue stream; substantially all replaced with a team from another industry (company with similar business model) with different skills to develop an new strategy 	<ul style="list-style-type: none"> See Network 3: Talent Acquisition 	<ul style="list-style-type: none"> Initial sales strategy proved ineffective so head of sales and most of sales team fired. New head of sales recruited by targeting current and former employees of a company in a different industry that co-founders learned about from VCs as company with similar business model. The new head of sales recruited the sales and sales support team from his network of former co-workers. A new and successful strategy to grow the business ensued Unable to close business with the largest customers in a certain segment, six sales and sales support employees met for one day to try to create a solution to market objections and limitations of the technology. They crafted a solution that lead to a secondary business model and revenue stream for the venture.
Scope of Action	<ul style="list-style-type: none"> Sought funding incrementally based on specific milestones Sought investors strategically based on 2 criteria: (1) ability to accelerate or provide access to specific nonfinancial resources and markets to achieve next milestone and (2) willingness and ability to be supportive but not an impediment 	<ul style="list-style-type: none"> Co-founders thoroughly vetted the concept with senior level professionals drawn from their existing respective professional networks Conducted concurrently with fundraising before hiring and building the technology 	<ul style="list-style-type: none"> Co-founders recruited incrementally and purposively Co-founders actively performance managed and were willing to "wreck and rebuild" functional teams and individuals due to inability to perform, adapt to changes in business or fit with the culture Co-founders progressed from micromanagers to open and multi-functional team decision-making 	<ul style="list-style-type: none"> First two years co-founders micromanaged the process and limited input to process to hasten product launch Facing a shortage in technical employees and growing feedback from the marketplace and other functional areas of the venture, an open decision-making process was created with the sr. leadership team prioritizing changes for the technical team and final approval of the co-founders 	<ul style="list-style-type: none"> Co-founders were quick to course correct ineffective strategies Co-founders were quick to replace ineffective employees Co-founders willing to walk away from customers who demanded modifications that would destroy the value proposition Co-founders moved sales and decision-making to multi-functional team but maintained oversight by engaging in the field with sales team and customers
Outcome	<ul style="list-style-type: none"> Co-founders maintained control of management Co-founders limited number of decision-makers Co-founders limited sources of feedback Attained milestones quickly before they ran out of capital 	<ul style="list-style-type: none"> Validated original concept Created interest among potential investors and customers Enabled capital acquisition 	<ul style="list-style-type: none"> Recruiting transitioned from externally sourced hires to organic growth through internal employee referrals Aggressively managing out enabled venture to rapidly change course and achieve milestones without depleting resources Co-founders identified need for structured recruiting function to address three challenges: (1) gap in middle management and (2) lack of diversity in terms of professional background (3) shortage of technology/analytical talent in city and limited network to connect to that talent 	<ul style="list-style-type: none"> Increasing stakeholder engagement from co-founders micromanaging a team of developers to build the prototype, to a multifunctional sr. leadership team engaged in a structured process to prioritize product modifications based on feedback from customers and ideas developed within the venture 	<ul style="list-style-type: none"> Rapid scaling and stretched resources prevented development of repeatable customer acquisition process Conversely, lack of tight processes and abundant resources encouraged innovative solutions and multi-functional engagement

6.9 Detailed Path Building Narrative: Pixel

Capital Acquisition

Initial conditions: The founder started with an idea and “found” the technology, but did not have the capital to acquire the technology or hire employees to build and sell the idea. What he did have, however, was a network of high net worth individuals, ‘angel investors,’ who had invested in previous companies he and his spouse had run. The additional challenge, according to one executive at the company, was that “[s]ome of them don’t like the space...[the city in which the company is located] is not a hardware community.”

Instigating event: “Capital needs,” as noted by the founder, “were first to acquire the technology...bring it down here and hire the people to turn it into a company.” So in 2006 the founder sought seed capital from friends, family and then “went out to a group of high net work individuals we know and asked them for checks.” The founder’s success in raising this initial round was considered “an endorsement of the idea” but had an additional benefit in that it meant “there’s somebody else who’s part of it because it’s lonely being CEO.”

Drivers: According to one executive, the greatest need of the company “is funds to keep it going as sales ramp up.” However, as one executive noted, whether it was raising funds from potential investors or obtaining credit from potential suppliers “because we’re not a known entity” both cash and credit were difficult to come by. For example, as one executive noted, “every time that [the founder] went over to England to try to raise money or in New York, we had certain milestones that we had to hit...to show progress.” The venture tried to “hit all the hot patterns that venture capitalists want to see” but tight capital constrains growth and slows progress. One executive described it as follows: “[W]e need more money than angel investors can provide, but we’re too small to get that venture capital money...too small for true private equity, so we’re kind of in that no man’s land.” He went on to explain, “with one or two contracts in hand...we can go raise a whole bunch of money.” In essence, the new venture found itself in an entrepreneurial Catch-22: capital is needed for growth and growth is needed to access capital.

Consequently, investors were selected for two reasons: (1) their ability to provide capital and (2) their “Rolodex” of “financial connections.” Nothing else. In fact, the founder commented that looking for investors with expertise to help build the company did not factor into the search for investors because “[i]t’s hard to find high net worth individuals with expertise in something that hasn’t been done before.” However, beneath this is another important driver, which is the desire on the part of the founder to maintain control. The founder avoided raising funds from investors who wanted to be engaged in the venture for the simple reason that “if you’re a pain in the ass, you’re a pain in the ass. I’m not going to take your money and have you be an investor pain in the ass...At some point you have to figure out how many phone calls in a day or a week is worth that much money.”

As a result, the acquisition of capital was most successful with friends, family, angel investors who had invested in previous companies of the founder and his spouse, and investors the committed angels introduced to the founder. Trust and a track record with the founder and his spouse was an important component of attaining the commitment of these stakeholders to support the building of “something that hasn’t been done before.”

Furthermore, the importance and urgency to raise capital also became the guiding factor in the selection of CFO. A series of CFOs were hired and promptly fired because as the founder explained, “they wanted to sit there and count money instead of raising them...they came in to rearrange money.” The current CFO, described by the founder “as the first darn CFO that he ever liked and worth a darn,” brought extensive experience in fundraising, investor relations and dealing with institutional investors.

Stakeholder Engagement: The three relevant constituents in this network are investors, investors who are board members and the CFO. In seeking capital to support the venture the founder first went to those he and his spouse knew to pitch the idea. And those who committed capital made introductions to other source of funding. According to one executive, “our investors have been invaluable...Opening up doors for other investors.” The founder maintains contact and continues to build relationships with potential investors. He explained, “even if you tell me no, you’re on my list forever...and I just keep sending you

stuff.” And this has paid off since “some of those people have actually come back and said this seems like a good time, can I come in now?”

Board engagement has evolved as the venture emerged. “To be on my board,” the founder explains, “you have to be an investor.” For the first couple years, the board of the company consisted of the primary angel investor and the founder. It has since grown to include three other major investors, one a neighbor of the founder and the others introduced by the primary angel. Initially board engagement was infrequent, “a phone call twice a year,” and the focus was on expanding funding sources. Board engagement is now more frequent and, in addition to providing “a Rolodex when needed,” the board is looked to for “candid counsel” and has even begun to provide customer leads. In fact, in late 2011, the board, according to one executive, challenged the leadership of the venture: “You’re thinking too small...You’re looking behind you instead of in front of you.” This board challenge was the impetus for a new revenue model and line of business for the company.

The greatest source of instability in this network has been in the position of CFO. The expectation of the founder was to engage a CFO with the skill to draw in and engage investors. Persistently disappointed in what he was able to attract to the venture, the founder contacted a friend at a firm that specialized in placing temporary CFOs in to emerging technology companies. As a result, in mid 2011, the venture contracted with a CFO who happened to be a serial entrepreneur himself with deep experience in fundraising, board and investor relations, financial reporting and financial engineering, all skills that provided structure, transparency and innovation and “alleviated the pressure on [the founder].”

Contingency Response: Thin capitalization of a new venture not only challenges the ability of the firm to grow as a business, but also has very personal implications. In addition to not being able to offer market rate salaries to its employees, several executives provided accounts of weeks and months when the company was not able to make payroll. “[T]hey all hung in,” according to one executive, “we didn’t lose anybody. It was pretty amazing.” There was a consensus that “confidence and belief” in “the vision and the team” prevented these situations from becoming catastrophic for the emerging venture.

Scope of Action: There were two principal actions that surfaced, one that shaped the network and one that shaped the activity. First, the founder put specific constraints around the type of investor he was willing to accept capital from. He specifically avoided potential investors who “wanted to be more involved, micromanage, ‘help’.” The founder had an additional limitation: “Nervous Nellies I didn’t take.” His rationale: “At some point you have to figure out how many phone calls in a day or a week is worth that much money.” In addition, the founder required all investors to assign their voting rights to him. “Cause you’re betting on me,” the founder explained, “You don’t bet on me? Don’t invest.” Unusual? “Wildly unusual,” according to the founder, “No one else has the guts to do it.” This approach, although successful in providing the founder with control of the venture, likely constrained the size of the network and certainly controlled the type of constituents.

Second, the founder provided the CFO with the autonomy to bring both structure and innovation to the venture to better position it to leverage market opportunities and seek institutional capital. For example, in a relatively short period, the CFO had introduced financial reporting systems to provide greater transparency and information to all investors and especially the board, implemented sales tracking and reporting systems to enhance transparency and information to the sales team and managers, and developed innovative revenue models to expand the market of potential customers. All of this creates the type of progress and milestones that attract institutional investors.

Outcome: “[The founder] never had a product, cash, a team and customers...he was always missing two or three of those pieces,” according to one executive, “we finally got over that over the last couple months.” Although cash was one of the critical pieces in continuous short supply, a trusted group of investors has remained loyal in their support of the company. “\$14 million later it’s friends and family.” And, as the founder noted, “[a] number of them have re-upped as many as four times.” Fortunately, as the venture has developed, the founder has moved toward more productive engagement of the board and greater reliance on the CFO that has enabled a shift in focus from persistent fundraising to product

innovation and customer development. As one executive noted this shift is necessary because “we can limp along, but that’s not an idea where to go to create value.”

Development of Value Proposition:

Initial Conditions: By studying the business model and industry of the company his spouse was running, the founder of *Pixel* identified an emerging trend and a gap in technology that ignited a vision for a new business. “And so seeing that wave coming” the founder decided that “jumping in the middle of that big wave” made sense because “if you’re going to run a company, do it in one where there’s a rising tide.”

Instigating Events: Prior to acquiring the technology, the founder met with potential customers to test the waters. He not only asked them “what’s going on in the space,” he explained his vision and asked, “If I can do these things, is this something you would buy?” After receiving affirmation that a market existed for the concept, the founder raised seed capital and acquired the technology.

Drivers: The founder engaged two groups of constituents to develop the value proposition: technical experts to develop the technology and prospective customers to understand the need. An advisory team of scientists and engineers, “some of the best brains in the world,” was formed to periodically collaborate, “brainstorm” and “challenge each other on what’s the right technical solution.” According to one executive, the founder established the advisory group “so I don’t get hooked.” The executive explained that “what often happens is the CEO/CTO founder, technical founder, they fall in love with technology...they have blinders on.” Throughout the development of the concept and the business model, the founder remained in contact with potential customers. As one manager explained, “you get something, you’d go back to the customer and say...” “Are we close?”” In essence, these distinct groups of stakeholders were drawn into the network to prevent the founder from getting locked into a particular technological path that would not be responsive to the needs of the market.

Stakeholder Engagement: The founder, according to one executive, made it clear that “nobody owns the technology, we collectively own the technology. So we as a group are going to figure out the best way.” By meeting with technical advisors “on a regular basis” to discuss and debate “what might work and what might not,” and relying on potential customers to identify “what’s going on in the space,” the process of transforming the vision into a viable value proposition was a collaborative effort from inception of the venture. Development of the business model as a group effort continued as new executives and board members were brought into the venture with fresh ideas. One manager provided the following example: “...we brought in a wonderful CFO...And the three of us sat around for probably two weeks, back and forth...let’s talk about assumptions, let’s run them by the board.”

Contingency Response: The concept for the venture came when the founder identified an emerging trend in an industry in which his wife was engaged, but no technological solution to convert the trend into an opportunity. The subsequent introduction to a new technology presented by university scientists outside the U.S. at technology forum, enabled the founder to connect a need in an industry with a technology designed for another use.

Scope of Action: By encouraging technical advisors to “challenge each other,” periodically gathering feedback from prospective customers, and later revisiting and revising the business model as key executives joined the company, stakeholders were engaged in a way that enabled developing a value proposition grounded in market needs.

Outcome: The continuous engagement of a variety of stakeholders in the development of the value proposition both at inception and during emergence of the venture not only enabled the flow of input but also prevented the company from becoming enamored or “hooked” by one technological or business path. Stakeholder engagement of this nature, as noted by one executive “decreases the probability of failure or risk because [the founder’s] got so many different minds...it becomes very collaborative.” Recent changes in the business model from this collaborative effort were described by one manager as

“a very exciting value proposition for not only our customers, but also for our investors...I think the success we’re getting is because we reframed it.”

Talent Acquisition:

Initial conditions: The venture began with an idea that was affirmed by a few potential customers, but no money and no employees. With the first round of capital, the founder acquired the technology and then shifted his attention to recruiting people to “turn it into a company.” Finding those people would be challenge. “[W]hen you’re doing something that hasn’t been done before,” the founder explained, “you can’t hire people who have experience doing it...this ‘previous experience’ thing doesn’t work.” To his credit, the founder brought to the venture a strong background in R&D with a prestigious institution and extensive experience commercializing new technologies. This gave the new entity a degree of credibility that would facilitate talent acquisition.

Instigating Event: After acquiring the technology, the founder sought two types of talent. First, he formed a group of advisors “to determine what’s best to build out of the technology.” “[W]ithout knowing anything about the space,” one executive explained, “[the founder] went out and found online some of the best brains in the world, called them up and said, ‘I’ve got this idea, I’ve bought the technology, I’ve already identified the market.’” The founder admits he simply “cold called” these experts because “they were some of the best guys in this space in the world and therefore they have the experience and breadth of knowledge I didn’t have to know what might work and what might not.” Second, the founder hired as his first employee a head of sales and marketing to identify the markets and build the strategy to facilitate sales of the product once it left development and went into production.

Drivers: Three main drivers guided recruiting and retention of talent to the venture. First, the founder sought professionals to fill his gap in skills and expertise. One employee praised the founder and his wife for “being open to all kinds of ideas,” because “they know what they don’t know... And they’re confident enough to admit it.” As a result, others were drawn in to shape and build the venture from inception. For example, despite the strength of his background in R&D, the founder formed the group of technical

advisors because “they have the experience and breadth of knowledge I didn't have to know what might work and what might not.” The founder similarly recognized that what he needed in sales was someone who was “great with social skills, since I have limited social skills.” One executive commented that the founder and his spouse, with their extensive backgrounds commercializing new technology, did not need the “adult supervision” he has had to provide to other early stage management teams. However, what they turned to him for were “process, procedures, things like that to supplement their skills.”

Second, the founder sought to hire people with high adaptation skills. He explained his approach as follows: “[T]hey have a base ability or knowledge in something, electrical engineering, mechanical engineering...But they also have a high adaptation curve. In other words, I can sit down with them with an idea, explain it to them and they can translate that into reality...and they're out of the box thinkers and they'll then think continually about how to improve upon a design...So you look for some basic background skills...but then you look for people with the attributes of quick on adaptation.” For example, the manager hired to take over operations was an engineer with extensive experience with early stage ventures as well as a Fortune 100 company, who wore a variety of hats in this young venture from hiring engineers to managing the supply chain and daily cash flow to working through technology issues and the eventual change in base technology with the founder. In seeking people with “high adaptation skills,” the venture attracted individuals who were motivated more by the vision of the founder than a specific product and role. As one manager explained, “it's not necessarily what I'm doing that excites me, it's who I work with.”

This comment also reveals the third driver in talent acquisition, which was the personality of the founder. The founder openly shared what he viewed as his shortcomings, for example admitting that he had “limited social skills” and that his personality “wasn't one that would fit to a corporate environment...because if you're my boss and you're a moron, you'll see it in my face.” This translated into hiring individuals who not only possessed the skills and adaptability the founder was looking for, but also the strength and confidence to work with the founder. As one manager commented, “[H]is personality could drive a lot of people crazy...some people would have a hard time...he has been so

successful in his life and his career and you sort of learn to trust that.” While another executive explained that he “had a fair amount of experience with former Marines or people of that ilk and I kind of know how to work with them pretty well...fighting fire with fire because [the founder] scares a lot of people but he doesn’t scare me.”

Stakeholder Engagement: Talent to build this venture was sourced in a variety of ways. The original group of experts to advise the founder was a result of internet research to identify domain experts followed by cold calling. Other key individuals were found through “friends and friends of friends.” Some had previously worked with the founder or his spouse. The founder also contacted people he knew with specific skills who could refer him to others with similar skills. The venture even had an in-house recruiter for a brief period. Employees became a reliable source of referrals and the company paid referral fees to their employees to encourage this mode of recruiting.

The venture similarly engaged talent through a variety of arrangements, whether it was a formal board or advisory board, full time employees or contract employee. For example the CFO, manufacturing and a marketing professional were all contracted. Another senior employee worked on contract for over a year before joining the company on a full time basis. This enabled the venture to benefit from the services of highly skilled and experienced individuals they would otherwise not be able to afford. With limited capital resources, the venture was not able to pay market rate salaries or fees. Instead full time employees were given an equity stake in the company. Stock was also used as a form of incentive and compensation for professional services and contractors engaged by the firm. As one executive explains, it was not the compensation that drew talent to the venture, “we got them because of the vision and the team and that’s how we’ve been able to keep them.”

Contingency Response: When it came to attracting talent, the founder took advantage of the unexpected. For example, when an individual who had previously worked with the founder, contacted him “out of the blue,” the founder knew this individual was someone he could trust to take over operations so he could focus on fundraising and sales. The position was created on the spot and the individual hired

because, it was a good fit at the right time. Similarly, an introduction from a friend of a friend of the founder's led to the hiring of a senior sales professional. According to the employee, "it was just meant to be." However, the founder recognized that this person filled an important void: "[h]e's great with social skills and since I have limited social skills, he was a great fit." The recent hiring of the founder's spouse as the head of sales and marketing provides another example. After the founder fired the original head of marketing and sales, the company conducted a formal search for a replacement. Concerned "[w]e're going to pay a whole bunch of money" and not get the desired outcome again, the founder turned to the person he trusted the most, his spouse. Her extensive experience, contacts and demeanor actually made her another good fit for the team. As one manager commented, "[the founder's spouse] in her own right is a master visionary," and he went on to explain that she "is coming up with some great ideas from her past life...and some exciting stuff is going to take place there."

Scope of Action: Limited financial resources led to hiring that was judicious and opportunistic and retention that was based on the ability to perform. As the founder commented, "I fire early and I fire often," and he went on to explain, "If it's not going well, it's never going to go well...As soon as it became obvious they couldn't accomplish what they were hired for they were terminated...Once it's obvious, it never gets better." He provided two examples of this policy in action. In the first situation, the founder fired "the first guy I brought in...once we got out of development and into marketing and sales, he didn't have the ability to do marketing and sales...But that wasn't evident until you called on him to produce that skill." The second example was the series of CFOs who were hired and fired. "[T]hey want to sit there and count money instead of raising them...they came in to rearrange the money...and they failed. They were fired." Action that enforced accountability and limited the impact of hiring mistakes, however, was balanced by action that encouraged advisors and employees to participate in innovation and solution generation. One executive explained the relationship with the employees as follows: "[W]e value what they do every day. That's not just some mission statement on our wall. Every single day we value what they do and their voice is heard." Other executives praised the founder and his spouse for creating an open and accepting culture and "being open to all kinds of ideas" and "not afraid to try anything." These counter-balancing actions, however, were enveloped by structure and processes designed to guide action

and provide stability within the venture, such as sales tracking and reporting systems and lead generation and management systems.

Outcome: Hiring and retaining the right talent, that is, people who the founder could trust to execute their roles and help shape and build the venture, was an iterative process. As individuals were hired, fired and replaced, a team of loyal and skilled professionals emerged that enabled the founder to turn over control of certain activities and focus on activities where he could add the most value. The strong personality of the founder was balanced by the strength of his management team. One executive recounted a comment from the founder where he described his management team in the following manner: “[I]t’s not like herding cats, it’s like herding tigers and the thing with tigers is that they bite back.” But, as one manager commented, “the chemistry is good here.” This “chemistry” manifested as a strong sense of loyalty that bound the employees to the venture even when they had to go “multiple months’ with out paychecks. One executive commented that during those difficult times “we didn’t loose anybody. It was pretty amazing.” Retention of talent and the continuing loyalty of employees, however, were clearly linked to the founder. One manager shared the following perspective: “[T]here are three people in my life now that I would ...walk across coals and [the founder] is in that category...just a great guy and I think I could speak for pretty much anybody, if [the founder] left tomorrow...and he’d go start another company...as much as we all love what we’re doing...if [the founder] calls me, I’m going to follow him. He’s a pleasure to work with and you just learn so much.” Another employee shared a similarly positive comment about the organization that has emerged, “ [T]hey’ve [the founder and his spouse] built a team with a lot of spirit and a lot of confidence that whatever happens...we’re going to fight ‘til we can’t fight anymore...it’s been a real experience and joy.”

Product Development:

Initial conditions: The founder, who had a deep background in R&D and commercializing emerging technologies, was introduced to the original technology developed by the venture while participating in a technology forum as a judge and mentor. With the initial round of capital, he purchased the IP from the university scientists who developed it.

Instigating Events: With a new technology in hand, the founder “formed a group of advisors to determine what’s best to build out of the technology.” At the same, time he consulted with prospective customers to define “the attributes they wanted to see.”

Drivers: Stakeholder engagement around product development was driven by three goals. First, was a commitment to provide solutions tailored to customer needs. “Our DNA,” according to one manager, “says we as a company-we really care about our customers and we really want a solution that fits in the long term...we’re going to compete because we’re going to listen to our customers and we’re going to help understand their pain points and we’re going to develop products that fit.” There is a keen awareness by employees that “the [product] is there for one reason and that’s to make money for that [customer].” Second, was the willingness to experiment and not give up until a solution is found. One executive explained, “[the founder] is not afraid to try anything and that’s critical.” Another employee described it as “an entrepreneurial spirit...no quit attitude...here’s what the problem is. Let’s find a better solution and come up with a better product.” Third, was a sense of urgency to stake their claim in the market before the competition emerges. “[W]e don’t have any top competitors,” according to one executive, “So there is a place to do, if you will, a land grab...that is if we can go out right now and get some customers.” And to do that requires products that can solve customer problems and help them make money.

Stakeholder Engagement: Product development is a multi stakeholder activity. Since inception, the founder grounded product development in the customer. He explained that “they defined the attributes they wanted to see and then I stayed in touch with them...And continued to show them the advancements along the way.” “[L]istening to the customers has helped us evolve,” one employee related, “we listen, and we come back and we say...can we do this?”

The founder, the management team as well as employees in sales and engineering participate in this activity. As one manager explains, “[W]e encourage a culture where people are comfortable saying...why aren’t we doing this or my customer said this.” However, engagement of stakeholders with different

perspectives involves a balancing act. “Engineers by nature,” explained one manager, “got to make this thing perfect and they freak out when we’re releasing what we have.” He went on to suggest that “if you left it up to this side of the aisle [engineering] we wouldn’t get any place, we would be sitting in a box,” because “[s]ix months in the technology world, 12 months in the technology world, people have already passed you by.” Another manager explained his role was to manage the creative energy and vision of the founder and serve as the interface with other employees who in trying to keep up with the founder’s vision ask “why the changes, why are we going to go from this direction to this direction?”

Being a hardware company required engagement of another group of stakeholders in product development, suppliers and contract manufacturers. For a young venture that is not a known entity, it has taken time and trial to establish relationships with reliable companies. As they sought to establish reliable relationships, suppliers unwilling to extend credit or who delivered poor quality product added to the challenges of the venture early in development. Capital constraints meant that contracting manufacturing was more cost effective than manufacturing in house and staying with local contract manufacturers gave the venture greater oversight on product quality. The in-house engineering group became responsible for both building prototypes but also engaging with the manufacturing facility to find cost efficiencies.

Contingency Response: The venture demonstrated resilience in the face of the unexpected. For example, one employee explained how the early product had a “difficult repair path” that created a “make or break challenge” for the company. The founder and the engineering team developed a unique design that not only eliminated the maintenance problem, but became new selling point for the product. A more dramatic example was the problem the venture encountered in developing the new technology. While the original group of technical experts wanted to continue to work through the issues and develop that technology, a newer manager was not as confident in the approach and began searching for an alternate technology. “We went far down the path with [the original technology]...I think we probably stayed a little too long...[the founder] was being advised by ...probably the smartest team in the country from a technology perspective...who were six more months we’re going to get there, 12 more months...X more dollars...we don’t have money ...we’ve got shareholders who want to see progress.” In time the founder

made the decision to change to another more reliable technology. The new challenge was to take the technology that was already in widespread use and create a unique product. By applying the learning from the original technology, the venture was able to develop a new line of products from an existing technology.

Scope of Action: Product development from inception was a collaborative process guided by a founder “who is not afraid to try anything.” One executive noted that they are proposing on projects that “literally have never been done before.” Another employee could not recall a time when he proposed an idea and the founder said no. But being adventuresome is about the willingness to take risk and as one manager explains, “it’s all about timing...if you go too early, you could make a big mistake but if you wait, people are going to pass you by.” He explained that when the founder buys into an idea, you have to be ready to move forward.

Outcome: Broad stakeholder engagement and an environment that encourages experimentation, has enhanced the ability of the company to create unique products for unusual problems in the market. The venture has gone from one product offering to multiple products. “Every obstacle we face,” according to one employee, “they haven’t gone around it, they’ve gone over it and that gives you a lot of confidence.” One executive shared comments from one prospective customer: “You’ve listened to me and developed a product that really hits the sweet spot.”

However, the lack of structure around this activity may be a weakness. For example, the technical advisory group formed to challenge ideas and prevent the founder from getting “hooked” on the original technology, became locked-in to the original technology and was not able to signal when it was time to try something new. This cost the company time and money. In addition, the venture has no way of prioritizing customer driven modifications, which could challenge thin resources. One manager hopes to create structure in the future by separating the design function from the production function so a dedicated team can focus on new products, while another group focuses on product enhancements and driving down production cost.

Customer Acquisition:

Initial Conditions: Even before he acquired the technology, the founder of *Pixel* sought feedback from potential customers. The spouse of the founder provided introductions to many of these early prospective customers as a result of her past engagement in key target markets of the new venture. During product development, the founder allowed prospective customers to “define the attributes they wanted to see and then I stayed in touch with them.” He periodically showed them advancements in the hardware and used that feedback to continually refine the product.

Instigating events: Early engagement of potential customers was a key activity from inception. Consequently, the first employee hired by the founder was the head of sales and marketing. So the initial sales effort was lead by the founder and the head of sales and marketing. In 2009, after the change in the initial technology and as the product was being launched, an additional sales and marketing manager, with extensive experience in related products, was brought in to help build the team and develop the market.

Drivers: Network formation around customer acquisition can be traced to two primary drivers. First, infused throughout the company was a philosophy that the customer, not the company, should define the product. With limited financial resources, one manager explained that the only way they will be able to compete against other solutions is how well they address customer needs. “You build the product based on what the customer’s requirements are as opposed to what we think they are,” one executive explained, “We’re going to be able to compete because we’re going to listen to our customers and we’re going to understand their pain points and we’re going to develop products that fit.” Therefore, customers and prospective customers were continuously engaged to induce and solidify their commitment to the venture. Second, a sense of urgency pervaded the company. Not only was there was an awareness that competition can emerge at any time, but there was also an understanding that in order to raise another round of capital, the venture would need to demonstrate significant progress in penetrating the market. One executive likens the opportunity to that of a “land grab.” “There will be competitors coming,” notes

the executive, “there aren’t any yet, but they will come once they see our success.” As a result, there was a boldness in going after customers using both network, as well as non-network resources to identify prospects, referral sources and distribution channels fueled by what the founder describes as “a corporate culture of not fearing to call somebody. It’s better to call and look stupid and dumb than not at all.”

Stakeholder Engagement: Internally and externally customer acquisition was a multi-stakeholder effort. Stakeholders have been drawn into the network from a variety of disciplines and geographic locations and through numerous contractual arrangements. Engineering developed prototypes for trade shows and solutions to address specific customer problems. The CFO who recently joined the venture, formalized reporting of the sales process to “create a well-oiled machine” that provides transparency but also “made a difference in that now people feel the pressure.” He also brought “a different way of thinking to the company” to facilitate sales by creating different ways customers can finance or capitalize hardware purchases in a market where “customers were not willing to spend money on any capital [equipment] over the last two years.” A sales manager recruited early in the life of the venture because of his extensive experience and connections with competing products, built a young and aggressive sales team that did what ever was needed to get the product in front of prospective clients. “We were the ones out there...putting 30,000 on the sprinter van,” he explained, “going out there to see where you can get the new [hardware] in front of...doing trade shows and begging and borrowing and stealing and hanging our [hardware] where ever we can get it hung.”

Customer acquisition, however, was not executed without challenges. Unable to execute a successful sales and marketing strategy, the original head of sales and marketing was replaced by the spouse of the founder. She had to rebuild the strategy, the network and create momentum in this activity. “[I]t took me a while to sort it out,” she explains, “I had to go talk to customers...figure out how they currently buy their products...I have no problem asking questions...everybody was happy to give all their opinions...and then I took all those opinions and went to my trusted advisors...worked out a strategy and then implemented it.” Prior to her involvement, the customer acquisition strategy was “we’re going to hope and pray and talk to them all the time and they’re gong to buy.” But as she pointed out “‘hope’ is not a sales

strategy.” Her new understanding about how business is conducted in the industry opened distribution channels previously closed to the company. Not only has this new executive instituted sales training, a sophisticated demand generation program through an out of state telemarketer, a lead management system, but she has executed an aggressive PR campaign with a prestigious firm willing to work for a small stipend and stock and contracted a respected marketing expert who specializes in emerging technology companies.

Contingency Response: Leveraging the unexpected created opportunity for new stakeholder engagement and exposure to fresh ideas that improved execution of this activity. For example, a friend of a friend of the founder met someone in Bible study that had industry experience and connections he thought would benefit the new venture. He told the person to contact the founder. “It was a great fit,” according to the founder, “[H]e’s great with social skills and since I have limited social skills...he spends time talking to the customers, getting them warm and fuzzy, figure out what they needed. All those kinds of things you want from the sales guy.” The “sales guy” not only built a successful team of aggressive young sales people, but also became an investor in the company. Another example came out of the difficulty in finding a CFO. After firing a number of CFOs, the founder received a referral from a friend of a CFO who also happened to be a successful technology entrepreneur in his own right. Noting the challenge the company was having selling hardware in a market where “customers were not willing to spend money on any capital [equipment] over the last two years” and understanding the aspects of financial reporting that discouraged a company from capitalizing equipment, the new CFO devised a strategy of licensing the hardware that opened market opportunities and facilitated sales. “[N]o one else in the world, to my knowledge,” the CFO explained, “has ever thought about licensing [the hardware].”

Scope of Action: This activity was characterized by two competing categories of action: action that opened options and action that created structure around the activity. Openness to new ideas and boldness to test new ideas enabled the venture to create options and momentum and change direction based on feedback from a diversity of stakeholders. The following comments illustrate the spirit of this action: “a corporate culture of not fearing to call someone,” “do what we need to do to get the stuff done,”

“hanging our [hardware] where ever we can,” “[w]e just called them and went after them,” “[the founder], he never said no,” “[the founder] is not afraid to try something, “ “the good news is that [the spouse of the founder] and [the founder]...they are open to all kinds of ideas.” Conversely, there was evidence of growing structure and processes that built in accountability and efficiency around this activity. The implementation of formalized sales reporting provided tracking and transparency and pressure to perform. Sophisticated systems to find and qualify leads coupled with sales training, implemented by the new head of sales and marketing, lead to more effective and efficient use of the sales team. Thus while the first type of action created options and momentum, the second type of action focused on effective use of sales resources and instilled accountability in the process.

Outcome: The commitment to customer engagement and implementation of customer feedback created a loyal and trusting customer base. One manager provided the following example: “ [O]ne of the products one of the companies has bought from us...they could have bought it cheaper...it’s not really our core technology and yet they said...we just want to deal with you guys.” Another example was the result of the new head of sales and marketing taking the time to understand how the product category is traditionally bought and sold. This opened up new relationships with distributors, who previously refused to work with the venture. However, as one manager explained, “once they figured out we were not out to cut them out...they were happy to introduce [us]...we got into the [major project] because of them.” Also interesting to note, was the comment from one executive who said that since the implementation of the formal sales tracking and reporting processes “we’ve seen kind of increased energy if you will among sales people and more proposals per day.” Whether the improvement in sales productivity can be attributed to increased scrutiny of sales production, a more efficient sales process, a growing product line or some other source is not known, however, it does support one executive’s observation that the company is “starting to get some pretty big traction.”

6.10 Findings by Activity and Path Building Dimensions: Pixel

Path Building Dimensions	Activity 1: Capital Acquisition	Activity 2: Development of Value Proposition	Activity 3: Talent Acquisition & Management	Activity 4: Product Development	Activity 5: Customer Acquisition
Initial Conditions	<ul style="list-style-type: none"> • 2006 founder "found" the technology to develop an idea and established the company • Initial capital needs were estimated to acquire the IP and hire people to develop idea 	<ul style="list-style-type: none"> • Idea developed from studying the business model and industry trends of company his spouse was running 	<ul style="list-style-type: none"> • Founder's background in R&D and commercializing emerging technologies provided credibility in recruiting 	<ul style="list-style-type: none"> • Founder had extensive experience in R&D and commercializing emerging technologies • Founder identified the technology originally used by the venture while participating in a technology forum as a judge and mentor 	<ul style="list-style-type: none"> • Spouse of founder provided introductions to potential customers • Founder vetted idea with potential customers prior to acquiring IP • Founder consulted with potential customers throughout product development
Instigating Event	<ul style="list-style-type: none"> • 2006 founder raised seed round from family, friends and high net worth individuals 	<ul style="list-style-type: none"> • Prior to acquiring technology, founder vetted idea with potential customers 	<ul style="list-style-type: none"> • After acquiring the IP, the founder formed a group of scientific advisors to determine how to develop the technology, and hired a head of sales and marketing to determine how and who to sell the product to 	<ul style="list-style-type: none"> • Founder raised seed round and acquired the IP • Founder formed a group of science and technology experts to advise company on product development • Founder consulted with potential customers to identify important product attributes 	<ul style="list-style-type: none"> • First employee hired by founder was the head of sales and marketing • After the change in technology, a sales professional with extensive experience in related products and technology was hired to help build a sales strategy
Drivers	<ul style="list-style-type: none"> • Entrepreneurial Catch-22: capital needed for growth and growth needed to raise capital • Access to capital and financial connections • Desire to maintain control and autonomy 	<ul style="list-style-type: none"> • Feedback from potential customers provided affirmation • Technical advisors, formed to mitigate risk of lock in, provided sounding board, generated technical solutions 	<ul style="list-style-type: none"> • Founder sought professionals to fill his gap in expertise • Founder sought to hire individuals with high adaptation skills • Founder attracted similarly strong and confident individuals 	<ul style="list-style-type: none"> • Commitment to tailor product design to customer needs • Willingness to experiment and persist until a solution was found to address the customer/market need • Sense of urgency to stake their claim in the market before competition emerged 	<ul style="list-style-type: none"> • Commitment to tailor product design to customer needs • Sense of urgency to stake their claim in the market before competition emerged
Stakeholder Engagement	<ul style="list-style-type: none"> • Founder began with potential investors he knew, including those who had invested in previous companies run by he or his spouse • Third party recognition and awards provided additional credibility to attract stakeholders • Founder sent periodic company reports to update investors and potential investors on company progress • Investors opened doors to other investors • First couple years, the largest angel investor served as the only board member • Later, two major investors were named to the board • Turnover of CFOs unable to facilitate fundraising slowed activity until current CFO joined in 2011 	<ul style="list-style-type: none"> • Founder solicited input from technical advisors, potential customers and employees and encouraged discussion and debate to create a process of continuous transformation and improvement of the business model 	<ul style="list-style-type: none"> • Network sources, such as friends and employees, and non-network sources, such as the internet and recruiters, provided leads to talent • Third party recognition and awards provided additional credibility to attract stakeholders • Talent was engaged through a variety of arrangements • Below market salaries supplemented by equity • Stakeholders engaged because of vision, the founder and the team, not the compensation 	<ul style="list-style-type: none"> • Multi-stakeholder activity grounded in the needs of the customer • Customers and potential customers engaged in an iterative process of product development • Sales often served as conduit for ideas from customers and prospective customers • Engineers had to balance the pursuit of a perfect product against the need to get the product on the market quickly • Lack of history and lack of capital presented difficulty in establishing relationships with suppliers 	<ul style="list-style-type: none"> • Multi-stakeholder, multi-functional activity that employed different contractual arrangements to attract expertise • Third party recognition and awards provided additional credibility to attract stakeholders • Prospective customers identified through network and non-network sources, such as telemarketing, internet, cold calling and sophisticated lead generation systems • Customers and prospective customers continuously engaged to gather feedback and commitment • Engineers developed prototypes to address specific customer needs • CFO created formalized sales tracking and reporting to provide transparency and increased pressure on sales • Failed sales and marketing strategy led to hiring of new head of sales and marketing who developed a new strategy, instituted formalized and sophisticated sales process and hired outside PR and marketing professionals to promote the company
Contingency Response	<ul style="list-style-type: none"> • Challenges in raising capital meant difficult choices in allocation of resources and the founder and employees went multiple months, multiple times without paychecks to keep the company running and did so without losing or having to layoff a single employee 	<ul style="list-style-type: none"> • While serving as a judge for a forum on emerging technologies, founder identified a potential technological path through a technology developed by university scientists, for another use 	<ul style="list-style-type: none"> • Calls "out of the blue" from a former coworker and a friend of a friend led to the creation of two positions to take advantage of the availability of skills and expertise the founder needed, one to head operations and the other in sales and marketing • After firing the head of sales and marketing, the founder conducted a formal search for a replacement, but instead of spending a lot of money to hire someone he was not sure could deliver, the founder hired his spouse who had the track record, the connections and the demeanor. 	<ul style="list-style-type: none"> • Original product had a "difficult repair path" that presented a serious problem for the future of the business, however, the founder and the engineering team were able to develop a unique design that became a selling point for the company's products. • The original technology acquired by the founder was taking too long to develop, so the founder, influenced by a member of his management team, made the decision to drop the original technology and adopt an existing technology that when combined with the scientific learning from the original product resulted in a new product category. 	<ul style="list-style-type: none"> • Calls "out of the blue" from a former coworker and a friend of a friend led to the creation of two positions to take advantage of the availability of skills and expertise the founder needed, one to head operations and the other in sales and marketing • The current CFO, noting a chief obstacle to sales was the unwillingness of customers to spend money on capital equipment, devised a program to license the technology, the first of its kind in the industry, to place product in the hands of customers and create a source of recurring revenue.
Scope of Action	<ul style="list-style-type: none"> • Investors selected for capital and financial connections • Potential investors considered high maintenance or micromanagers were avoided • Investors assigned voting rights to the founder • Current CFO had autonomy to develop structure and systems to facilitate investor and board relations and position the company for institutional capital 	<ul style="list-style-type: none"> • Founder encouraged technical advisors to challenge each other's ideas, and integrated with input from other employees • Ideas and prototypes periodically tested with potential customers to ground development of the business model in actual market needs 	<ul style="list-style-type: none"> • Recruiting was judicious and opportunistic • Founder believed in firing early and often • Founder encouraged advisors and employees to participate in innovation and solution generation and created a culture that was open to new ideas and bold in testing them 	<ul style="list-style-type: none"> • A collaborative process lead by the founder since inception • Founder open to input from all stakeholders • Experimentation and testing new ideas was encouraged • Timing was an important consideration since releasing before the product was ready could taint the market, but staying in development too long enable competition 	<ul style="list-style-type: none"> • Activity characterized by competing action: that which increased options and that which created structure • Founder encouraged a culture of boldly pursuing new business • In 2011 the new CFO and head of sales and marketing began implementing processes to increase accountability and efficiency of the sales function
Outcome	<ul style="list-style-type: none"> • Investors remained loyal and a number reinvested as many as four times • Constant contact by founder converted individuals who initially declined into later stage investors • Founder maintained control of company • Current CFO facilitated more productive engagement of board, investors and fundraising activities enabling the founder to focus on product innovation and customer development 	<ul style="list-style-type: none"> • Business concept was validated by potential customers • Engagement created interest from potential customers • Multi-stakeholder involvement prevented lock in to one technological or business path 	<ul style="list-style-type: none"> • The strong personality of the founder was balanced by the strength of the management team • Aggressive performance management at the level of the management team limited the impact of hiring mistakes • Strong sense of loyalty to the founder emerged 	<ul style="list-style-type: none"> • Company started with one product and expanded to multiple products • Customers had confidence in ability of company to meet their needs • Employees had confidence in the founder and engineering team to solve problems and overcome obstacles 	<ul style="list-style-type: none"> • Commitment to customer engagement created a loyal and trusting customer base who sought to consolidate business with the company in spite of lower cost alternatives from competitors • By taking the time to understand how the product category was traditionally bought and sold, the new sales manager repaired damaged relationships and opened new channels for distribution of products • Improvement in sales productivity and number of proposals per day

6.11 Detailed Path Building Narrative: Prospect

Capital Acquisition

Initial conditions: In late 2006 the initiating entrepreneur began the search for people and capital to help develop an idea for a service that would not only benefit his existing business, but other similar companies as well. Over a 90-day period he discussed the idea with people in the local technology community. A chance meeting earlier in the year with an acquaintance from college provided the domain expertise he needed to help build out the concept. They came up with a “rough budget”... a rudimentary spreadsheet of what was it going to take to run the business for 12 months. And so we did some simple math and came up with a number...so it was really let’s run this for a year.”

Instigating Event: Late 2006, the instigating co-founder presented the concept to an angel investor in the local technology community who had made his money from a software business that he built and sold. The angel investor met the co-founder while trying to start a vehicle for seed funding and mentoring for startups in the community. He commented that when he initially met the co-founder, “I was pretty blown away by [co-founder]...the only reason he wasn’t already famous was because he was just so young. My gut feel told me that everything that he does is going to be done in a first class way.” When asked by the co-founder if he wanted to participate in the new idea as a seed investor he agreed and did so without any further due diligence. The angel investor explained, “[T]his was really the first time I sort of invested almost without asking any questions.” So in early 2007, the initiating co-founder contributed a third of the seed funding with the balance for the estimated budget provided by the angel investor.

Drivers: In spite of the accessibility to outside capital, the co-founders choose a path of bootstrapping for the new venture. One factor that went into the decision to discontinue the original business was the significant resources that would be required to scale the business. As one co-founder noted, “[W]e realized to get massive...would take too much runway or too much time.” Ninety days after close of the seed round and formation of the company “the business was pretty different than what we had started with and the people that we started with,” according to one co-founder. He went on to explain, “[W]e

quickly realized that the time frame of the business and direction we wanted to go in was a little different than what we had told him [the angel investor], so I bought him out.” Although the investor was “fine to keep going,” the initiating co-founder made the decision to separate from the angel investor (“go our separate ways because it was pretty different”) and bought out his stake in the business at a premium.

The idea of outside capital was entertained once again by the co-founders in late 2009. In order to leverage their momentum and increase the rate of grow, the co-founders sought institutional funding. Despite interest from the venture capital community, however, the co-founders again decided “it didn’t make sense to take money from any of them. Basically the business was growing so nicely and the percent ownership that they wanted, roughly a third of the business, what the business would have to become and then the risks of needing subsequent capital to get to that stage and more dilution...the business was growing so nicely on its own organically that it didn’t make sense to raise any institutional money.”

Thus, decisions regarding funding for the new venture appeared to be guided by a propensity for flexibility to experiment, fail and change course as the environment dictated through smaller milestones and having less at risk. One co-founder acknowledged that being internally funded was challenging for the first couple of years, “but once you sort of cross that desert to profitability, then it’s really liberating.” The co-founders viewed the constraint on growth as a result of limited capital as an advantage since “you don’t have enough weight...to really get into trouble...to really make a huge disaster financially.” One co-founder summed up this logic as follows: “[Y]ou can try things and if they don’t work out that’s fine because you didn’t really have a budget for it anyway. So next month you try something new.”

Stakeholder Engagement: Access to external sources of capital came through contacts of the initiating co-founder. The original angel investor who met the initiating co-founder through a mutual friend in the technology community described him as a “like-minded soul” with whom he became “pretty good buddies.” When approached with the opportunity to invest, the angel investor “was on board right away...it was a very simple process.” He described his investment as “really a bet on [the co-founders].”

According to the other co-founder, the angel investor “was instrumental in helping us get started.” Not only did he refer a third co-founder to the original group but, as a lawyer, he provided legal advice and other counsel. The mutual respect carried into the separation that was described by the angel investor as “[k]ind of the same way we went into the deal...we didn’t argue about price or valuation...There was not negotiation.” The initiating co-founder maintained his relationship with the former investor after the buyback of his interest in the venture, and helped form the technology accelerator two years later.

When it came to accessing institutional investors, the co-founders had to cast a wider net. According to the initiating co-founder, “[w]e just talked to whoever would talk to us” and once the word was out “people who had different connections...would open doors.” Although the initiating entrepreneur had existing relationships with the local venture capital community, other entrepreneurs, even a high school friend, were among those who opened doors to VC firms in other cities. In the end, they were able to pitch to 30 different firms around the country. Thus, the existing network of the co-founders provided direct and indirect access to funding sources had they chose to pursue external funding.

Contingency Response: The original two co-founders acted quickly on feedback from potential customers that revealed it was the technology platform, not the intended service offering, that had value in the market. Within 90 days after starting the business they changed direction and this not only changed the relationship with the other two co-founders, but with the angel investor also. Because the new business focus was markedly different than the initial concept, the original two co-founders decided on a buyout of the angel investor. While the specific circumstance leading to this decision are unclear (one co-founder said, “He was fine to keep going on but I said I prefer us to go our separate ways because it was pretty different”, the other commented, “It was just the case that he was really happy to put in money for the first business model, but not as much for the second business model. So we decided to cash him out.”), the investor received a premium over his initial investment and commented, “it seemed like a fair deal.” When asked if he would invest again with the initiating co-founder, he responded, “all he has to do is send me papers and I’ll sign...I trust him.” As a result, no bridges were

burned and the two remaining co-founders enhanced their flexibility and autonomy to build the new business.

Scope of Action: The original two co-founders opportunistically built and dismantled their network around capital acquisition, and they did so swiftly, incrementally and thoughtfully. Decisions around fundraising increased options but were also bounded by the amount the co-founders were willing to risk and the flexibility to fail and course correct. For example, the seed capital they sought was based the amount it would take “to run the business for 12 months” and the company was capitalized with in 90 days from the initial idea. Ninety days later, they initiated a buyout of the angel investor when they realized the original concept would “take too much runway or too much time.” This decision provided the flexibility and autonomy to pursue a new model that could be scaled with fewer resources. The co-founders were successful in using their relationships to gain access to the venture capital community, including the most prominent firms in technology funding. However, realizing that VC funding would change the dynamics of the business away from their philosophy of being able to fail fast and “just try something new,” they choose not to stay on a path of self-funding. As one employee commented, “I know [the initiating co-founder] has bootstrapped the company and had really been wary to go raise money from VCs, so that’s something that -- he has deliberately taken a certain path.”

Outcome: The strategic approach to capital acquisition taken by the co-founders provided them with a variety of options for funding, including both internal and external (angel and VC) sources. Their decision to stay independent, although a more challenging path until they crossed “the desert to profitability”, allowed them to maintain control of the process of building the new venture as a small company through trial and error where mistakes didn’t “have enough weight...to really get in trouble...make it a huge disaster financially.”

Development of the Value Proposition

Initial Conditions: According to one co-founder: “[T]he idea came from my experience with...the other company that I started...My background in sales and marketing and me wanting to have more visibility

into ways that we can become better at sales and marketing led to the idea...We were just trying to solve our own problem.” Interestingly, the other co-founder admitted that he “was not fond of” the original idea: “[T]hose business models are very successful, but they again take a lot of capital to get started...and so that was my concern to [the other co-founder] when we first talked about it. And he kind of convinced me that it could work. And so, basically when I started the company with him, I didn’t believe 100% in the idea, but I believed 100% in my co-founder. Then I figure we’d fail fast and figure something else out.”

Instigating Event: The four co-founders who established the venture built the first version of the product focused on the original service concept and took it to market. One co-founder explained, “[A]s part of this process we were just talking to as many people as would talk to us.”

Drivers: Feedback from the market was a key consideration in the development of the value proposition. It drove a fundamental change in the business as explained by one co-founder: “[A]fter talking to some product vendors that we wanted to buy our [service], we realized that the product that we had built [to provide the service] was actually more valuable...so really quickly we realized that we were on the right path in the right area but we needed to focus on being a technology provider as opposed to [service provider].” The willingness of two of the co-founders to “experiment,” “fail fast and figure something else out” enabled them to make their “first major iteration very quickly.”

Stakeholder Engagement: Although the business of one of the co-founders triggered the idea for the new venture, it was talking to “a number of different people,” including potential customers, that lead to the “first major iteration in the business” which was a shift in the value proposition from providing a service to being a software company. According to one of the co-founders, “It was very obvious once we had enough information, once we had talked to enough people about the original idea, it was obvious that what we had built and the direction we were going, this other thing was going to prove to be much more valuable.”

Contingency Response: The two co-founders heeded the feedback from those they spoke with. When they realized the value was not in the service, but in the technology platform they had built (“Ok, the business model is not going to be what we want, but the software prototype we built to power it is really valuable.”) and that a business built on the software was “much more repeatable,” they “scrapped” the original business concept, parted ways with the other co-founders and investor and became a software company.

Scope of Action: The actions of the co-founders are best summed up by the initiating co-founder: “[I]t was...coming up with the original thesis, taking it to market, gathering feedback on it and then seeing a better path once some data had been collected.” But underneath this was the willingness and ability of the co-founders to “experiment and see what works” and then make the necessary changes, even if it meant reorganizing the venture and its founding group.

Outcome: As a result of the actions of the two original co-founders, the value proposition of the venture, as well as the organization, were reconfigured. Version ‘2.0’ was more consistent with the needs of the market and the desire of the co-founders to provide something of value and scale quickly with limited resources.

Talent Acquisition:

Initial Conditions: When it came to attracting and managing talent for a new venture, the initiating co-founder had “seven years worth of experience recruiting people and finding engineers and sales people. Engineers and sales people are the hardest positions to fill.”

Instigating Events: The initiating co-founder first concentrated on recruiting people for the founding team. The first person he contacted was a classmate from college with whom he reconnected during a chance meeting at a professional association event. According to the other co-founder, “I wasn’t ready to start something new, but we threw around ideas for essentially a couple years.” Over the course of those couple years, “[H]e [the initiating co-founder] had this business and just wanted to look for ideas to make

the sales and marketing process more efficient. So that's where we came together with this idea." However, once they decided to form the venture, they weren't in total agreement about the original direction of the new venture, "[B]asically when I started the company with him I didn't believe 100% in the idea, but I believed 100% in my co-founder. Then I figured we'd fail fast and figure something else out. And, we did."

Drivers: This activity had two main drivers. First, recruiting was based on domain expertise and the needs of the near term needs of the venture. For example, the initiating co-founder engaged his college classmate because of his "domain expertise, his energy and excitement." Within a month after separating from the original founding team, the two remaining co-founders recruited a software engineer to build the product and fill the void left by a departing co-founder who was the original programmer. The next hire was someone to fill the sales role left by the other departing co-founder, and they were able to find an individual with 10 years sales experience and a technology background. A year later, with a growing customer base, the co-founders hired someone with team management experience to build the customer services team. In the past year, the young venture has hired a manager to coordinate product development and management that has become increasingly complex as the number and nature of stakeholders engaged in this process expands.

The second driver has been maintenance of the values and culture of the firm "so when you hire someone you know they're going to work out and culture becomes a self-sustaining thing." According to one employee, "We've done a really great job hiring people who will be good cultural fits...I think it's the number one thing that we hire for." The culture, which was consistently described as "fun," has been based on three key attributes that all interview participants articulated they look for when hiring: positive, self-starting and supportive. As one co-founder explains, the culture was created "sort of by luck": "[O]ur first dozen or so employees were fantastic...we looked around and said this is something that we want to preserve. And so we kind of defined what 'it' was and really made it a scientific process to make sure we kept that going." It is a structured process where an offer for employment is predicated a "100% unanimous" decision of employees who participate in the hiring process.

Stakeholder Engagement: One of the co-founders admitted that talent acquisition has been a “major growing pain” even though according to the other co-founder the “terrible economy...makes it easier to hire people.” Initially the company relied heavily on a variety of network and non-network resources for candidates, including social media, online job boards, college fairs and recruiters. However, as the venture has grown, 50% to 60% of their employees come from internal referrals. In fact, one co-founder feels that internal referrals “have been the best” so they incentivize employees with a referral bonus and as one employee commented, “[W]e joked that it’s sort of a pyramid scheme.” Last year they extended the referral program to people they know in the local technology community.

In drawing talent to help build the venture, it is interesting to note that the co-founders have deliberately avoided establishing an advisory board. When asked why, one co-founder simply replied, “Blissfully ignorant.” Not having outside investors meant that the co-founders did not have to establish a board. The other co-founder acknowledged that at the heart of this decision is the fact that “none of us has friends or colleagues that have had great experiences with advisory boards” and went on to explain, “We’ve had friends that have had negative experiences with them.” Instead, for advice, the co-founders turn to the expertise and experience of mentors and peers in a combination of informal settings and more formal entrepreneurial peer-to-peer forums.

The co-founders from the beginning relied on their team of managers and administrators to shape their functions and teams as they saw fit. In fact, one manager commented that the team he built is actually an “imperfect version of me” while another manager described his team as “close-knit.” All the managers described how they were able to define their roles and processes, as typified by the following comment from one key employee: “[O]ne of the greatest benefits is getting to sort of craft what I do and shape it.” Communication within the organization was defined by one manager as “informal communication” with an “open door policy.” This has encouraged “cross-pollination” in an environment where “co-workers really do care about each other.” Even the sales organization which implements clearly defined performance targets and timetables also benefits from the support of other departments to boost the success of its

sales reps. While those who do not meet their targets are fired, and turnover in the sales function is the highest in the organization, monetary rewards and company wide recognition for sales reps who meet and exceed their targets is significant and young reps have been able to reach “places they’d never expected to be at this point in their lives.” Despite the expectation of hard work, however, there has been a concerted effort to make the environment “fun.” For example, employees break to play ping pong and pinball, lunch is catered on certain days, and the vacation policy is “be reasonable.”

Contingency Response: The co-founders have been opportunistic in hiring and shaping the talent in the organization. Some of their key hires they attribute to “luck” and “accident”. For example, one co-founders described the timing of their search for a lead engineer as “just luck. He was a former intern of [the company of the other co-founder]...graduating with honors.” This same co-founder described their second hire as follows: “ An amazing VP of Sales that we hired kind of by accident. We were looking for just an entry level sales rep...was contacted by this guy with 10 years of sales experience...[the other co-founder] asked me how it went and I said, “I’m not sure if he’s trying to sell me anything, but I think I just bought it.”” Similarly, the culture that emerged in the organization and now is strategically nurtured happened by “luck”: [O]ur first dozen or so employees were fantastic...we looked around and said this is something that we want to preserve. And so we kind of defined what ‘it’ was and really made it a scientific process to make sure we kept that going.”

Scope of Action: Initially characterized by informal actions both in terms of recruiting and talent management, the co-founders quickly honed on what was working and created or enabled structure and processes to perpetuate the positive aspects of the new venture. For example, the structured recruiting process was an effort to continue the spirit of the small team they built in the beginning. Similarly, the sales performance management system was developed over time. Yet the informal nature of engagement within the company has been maintained to some extent within the larger structure through, for example, a “no vacation policy” policy and “relaxed” work environment, to attract and keep employees.

In addition, the co-founders did not rush to build the organization, but recruited incrementally and strategically only seeking to hire managers for specific activities. For example, the initiating co-founder engaged his college classmate because of his “domain expertise, his energy and excitement.” Within a month after separating from the original founding team, the two remaining co-founders recruited a software engineer to build the product and fill the void left by a departing co-founder who was the original programmer. The next hire was someone to fill the sales role left by the other departing co-founder, and they were able to find an individual with 10 years sales experience and a technology background. A year later, with a growing customer base, the co-founders hired someone with team management experience to build the customer services team. Similarly, managers hired slowly in their functional teams. Engineering began in 2007 with eight interns and eventually hired a couple of full time positions a year to get to the team of 10 engineers that support the venture. Customer service has developed a number of specialized teams over the years as needs developed, including one team focused on new customer onboarding and another on client advocacy for customers at risk of leaving.

Finally, this activity has been characterized by the willingness of the co-founders to performance manage and dismantle parts of the organization that it can no longer support or aren't appropriate. One example is found in the break up of the initial founding team since it was not longer the right mix of talent for the new direction of the venture. A second example also occurred early in the life of the venture when the company staffed the sales team too quickly and then had to lay off most of the team when they were not able to develop revenues to support the headcount. One employee described that situation as “really difficult, but it's sort of a live and learn thing.” A consequence of that experience may have been the development of an aggressive sales performance system that flags performance issues quickly. One manager summed up the “mantra” of the firm as “Hire slowly, fire quickly.”

Outcome: This venture that found a new direction after one false start began as two co-founders in 2007 and reached 65 employees by late 2011. Although talent acquisition is a “major growing pain,” turnover is low and reliance on internal referrals, considered more reliable, are on the rise providing 50% to 60% of new employees. An informal and collaborative work environment has given rise to structure recruiting

and performance management system to preserve the unique culture that has emerged and attract more like-minded individuals. In spite of the structure put in place, maintenance of the work environment and culture is uncertain as the venture continues to grow. As one employee noted, “It’s starting to get to the point where not everybody knows each other really well...and then preserving the culture is difficult.”

Product Development:

Initial Conditions: The original idea, born out of the experience one co-founder had with another company he founded, was transformed into a technology platform through the effort of three of the original co-founders. However the driving force for product development early came from the original two co-founders. The instigating co-founder describes the process as “us debating but me mostly leading the charge” for the first few months because of his experience with his other company.

Instigating Event: When market feedback initiated the conversion of the young venture to a software company, two of the co-founders left the company, including the co-founder who was responsible for technology. The first hire for the reconstituted new venture was a lead engineer who was completing his Masters. While one co-founder served as the product manager, the other co-founder along with the lead engineer built the new technology.

Drivers: From the onset, product development has been driven by a concerted effort by the co-founders to gather feedback from stakeholders. Both potential customers and the company established by one of the co-founders provided critical input for the emergence of the organization and its client base. Emphasizing the venture’s focus on the customer, one senior manager explained, “[t]here has always been a dotted line between sales and product.” As the venture grew, formalized processes, both internal and external, for gathering real time feedback on the product were put in place to ensure that resources were deployed and changes made on the product that created the most value for customers. The company has an internal (for employees) exchange and an external (for customers) exchange where stakeholders can post and vote on ideas. In addition, all departments within the young venture have the opportunity to provide their top 10 lists to senior management. However, product development is closely

managed and driven by a philosophy that features will only be added or changed if they benefit “most of our clients.” As one co-founder explained: “There’s an idea of products of ‘feature debt’ and that basically means you do some feature to make one person happy and as a result of it you’re stuck supporting it forever and it makes everything else you do worse.”

Stakeholder Engagement: Product development has engaged the most diverse group of stakeholders. Since inception, when input from potential customers completely changed the ‘product’ offered by the new venture, the co-founders have drawn in a wider range of participants into this activity. According to one co-founder, “[W]e make changes everyday...it comes from a mix of customer requests and our own vision for the product...It comes from everybody at the company...every department is sort of a constituent and the clients are the main constituents.” For example, clients can post ideas and vote on them through the external exchange. Once manager commented that “we usually get notifications whenever something is posted’ and explained that if an idea gets 55 votes, “then we know it’s something important.” Conversely, one co-founder noted that, “We never listen to prospects because they want everything...if something doesn’t benefit 80% of our clients, we don’t do it. So even if, let’s say Microsoft said we’ll sign up but you have to do this...if it doesn’t meet the needs of the rest of our clients, it will just sort of ruin the product...we’d rather be opinionated.” The result is that both clients and prospects know what to expect upfront from the product they are buying, and more important and clients know that their ideas are valued.

Internal stakeholder engagement in this activity began with the hiring of the lead engineer, who built the technology “directed by both the founders and also market feedback.” One manager explained that as the company grew, systems and processes have been put in place that allow everyone to contribute: “[W]e’ve seen some great stuff...because they don’t only poll sales, they poll service...even the engineers get the opportunity...every department in the organization has the opportunity to come up with 10 things and then you negotiate our way into having those in the product.” The growth in the number and nature of stakeholders contributing to the activity is beginning to present challenges for management of this activity: “working on new features that clients want and making the product stable and scalable.” In an

effort to continue to evolve this activity the co-founders recruited someone they knew from the local technology community for a “relatively new” senior management position, separate from sales and engineering, which is solely dedicated to overseeing the product management process.

Contingency Response: The original two co-founders looked to their environment to provide opportunity. When the initial business concept wasn’t getting traction, they listened when prospective customers pointed to the technology platform, not the service as the more valuable aspect of the business model. The co-founders were willing to scrap the original business and rebuild the organization and the product based on that feedback. The month after they decided to become a software company, they were fortunate enough to be able to hire an engineer who was completing his masters who had interned for one of the co-founders a couple years prior. As one co-founder expressed it, “it was just luck.” That individual helped build the new ‘tool’ and now manages 10 other engineers.

Scope of Action: Product development initially began with the two original co-founders “debating” the issues but one actually “leading the charge.” With growth in the organization and the customer base, the co-founders have enabled a broad group of stakeholders to influence this activity through multiple means, including the use of technology. Limited resources, competing and growing demands, as well as a desire to maintain value for clients and the company has resulted in a more formalized structure to process the increasing sources of input through online voting systems, prioritization and justification of requests, and a dedicated manager to oversee product management. For example one manager explained how one internal system works, “[A]ll the sale people get together and we come up with the top 10 things we’d like to see and then from there we have to explain and justify why we think this thing is important.” He noted that every department in the organization has the opportunity to come up with 10 things and then “negotiate” which features get added to the product. Indeed, even customer input goes through a process of justification where requests for product features must benefit most and not only a few. Thus, while there has been an increasing number of stakeholders involved in this activity, decisions have become increasingly bound by more formalized systems for process input from those stakeholders. But

in the end, as one manager involved in product development explained, “[I]t’s not going to be the end of the world if you screw something up.”

Outcome: One senior manager attributed the rise of the young venture from “a blip on the radar to one of the major names” in the industry largely to “the quality of our product, obviously.” Broadening stakeholder engagement, both internal and external, in product development, while closely managing the structure around it, including being specific as to exactly who has a stake in this activity (“we never listen to prospects”), contributed to the emergence of the young venture.

Customer Acquisition

Initial conditions: In the beginning, the co-founders presented their business concept to anyone who would listen. Although they encountered people who had an interest in the new service, “[w]e didn’t have any existing customers” according to one co-founder. It wasn’t until after they went through the process of trying to sell the service to prospective clients, did they realize that “the product we had built was more valuable than the service.” As one co-founder explained, “[W]e made our first major iteration very quickly in the business.” The other co-founder was more blunt, “[A] month after starting that, we scrapped it, became a software company, hired a guy who became our lead engineer.”

Instigating Event: The fourth hire for the reconstituted business was a sales rep brought on in the last quarter of 2007 to start selling the product. They building the customer base would be a challenge. As one co-founder admits, “It was so early in our market.”

Drivers: The efforts to build the customer base of this new venture were driven by three goals. First, the company has had to create awareness in the market and demand for the product. The consensus in the company was that when they launched the product in 2007, they were “a little bit early.” Even in 2011, the sales reps have to explain what the product does and “the market is still a market for early adopters.” One manager framed it this way, “[P]eople don’t know they can’t live without this stuff and they don’t know

that it gives them a competitive advantage...we're working to overcome that....we're doing our part to educate the market."

Second, the new venture has had to identify the appropriate customer for their product, a customer that will add value to the business and not diminish value. According to one manager, "[w]e've just refined our focus over a span of a few years." The company has found that not every customer or prospective customer is a good long-term fit. In fact, another manager explained, "[I]f we know someone is not a good fit, then there are times when we have recommended other products." One co-founder explained this disciplined approach as follows, "[E]ven if, let's say Microsoft said we'll sign up but you have to do 'this.' Well, you know, if it doesn't meet the needs of the rest of our clients, it'll just sort of ruin the product...we'd rather just be opinionated and if for some reason it's not a fit, it's not a fit...as a prospect or client, you know that up front." Thus, the company has decided not to go after "sexy enterprise clients" because "it would completely change who we are."

Third, the company has attempted to develop a repeatable customer acquisition process from both the sales and service side of the business. Strong mentoring by the sales manager, coupled with an aggressive performance management process with specific goals and tracking systems has been put in place to. Sales reps are supported by ongoing education and a central knowledge base that allows them to quickly find answers to questions from prospects. In addition, a client services function has been built to ensure "that clients see value early on and then continue to receive the support they need." This includes standardized procedures for client onboarding as well as advocates to handle complaints and problems to prevent loss of customers. Lost deals and lost clients are tracked to improve process for customer acquisition and retention.

Stakeholder Engagement: Customer acquisition involved a multiplicity of stakeholders engaged in a variety of ways to shape the young venture. One co-founder summed up the focus of this activity as follows: "[E]very department is a constituent and the clients are the main constituent." In the beginning, feedback from prospective customers shaped the direction of the new venture. Because customers are

on a month-to-month basis with the venture, customer acquisition has essentially been a continuous process based on open communication. The use of public exchanges allows existing customers to post, comment and vote on customer service procedures and product modifications. For example, the system for new client onboarding was a result of client feedback. Customer feedback is also regularly sought through the customer advocates who intervene when there are product issues or a customer is perceived to be at risk of leaving. According to one co-founder, “Our clients love us because we bend over backward for them.”

Leads for prospective business are cultivated through word of mouth referrals and by “sponsoring communities...websites” where potential customers “hang out.” Smaller customers allow their names to be used as referrals, and as contacts with customers have changed jobs, they have recommended the service to their new employers. One co-founder explained that larger clients, however, generally do not want their names being used as referrals. The sales team converts leads to customers via telephone and online demos. As one manager explained the sales process in place has come a long way: “[W]e were learning on the fly...there were times where I would be on a demo or on a phone call and I’d see an IM [instant message] screen pop-up – it was the person who shared a wall with me, [the co-founder who oversaw product development] or [the lead engineer]...you should say this or you should say that...coaching me on sales... we were learning as we went.” This “dotted line between sales and product” has transformed customer acquisition into a collaborative activity. All functions have contributed to building a knowledge base, “the corporate brain”, that provides the sales function with a quick way to respond to questions during sales calls. And sales uses their customer interactions to create their own “top 10” ideas for product development.

Contingency Response: The new venture has taken advantage of unexpected resources and outcomes. One manager credits the co-founders with “being opportunistic and being able to have a good idea and opportunistically staffing around that idea.” For example, one co-founder explains how they hired the current EVP of Sales: “An amazing VP of Sales that we hired kind of by accident. We were just looking for an entry level sales rep to just bang on the phones and see what works...and was contacted

by a guy that had 10 years of sales experience...He was instrumental in developing this [sales] process.” The sales process it self early on lead to some “disasters” that the venture converted to learning experiences to hone the market for their product. A manager explains one particular situation as follows: “[w]e had the idea that we sell [software]...it makes sense on paper. We called [a particular customer segment]...no one cared...that was a disaster, so we didn’t try it any more.” From that experience they returned to an original assumption they had about the appropriate customers for their product, which turned out to be the more effective strategy.

Scope of Action: This activity has been characterized by (1) management autonomy, (2) willingness to experiment, (3) open communication and debate, (4) aggressive performance management and (5) customer management. In essence, a wide scope of action within specific boundaries or structure. First, as functional managers were hired, the co-founders allowed them to shape their domain. According to one manager, “I had to flush out the duties and responsibilities...and it’s definitely changed...just figuring out the role and how to make things more efficient. We have changed a few thins along the way...just trying to streamline a few things and often figure out the best way to grow the team.” Another manager explained, “[W]e were learning on the fly...We were learning as we went” and went on to describe the willingness of the co-founders to defer to their managers: [T]hey’ve never gotten involved in the sales process other than to give true feedback more so to say “How are you doing?” “How’s the focus?” “What should we change?”...but never have they ever said you should definitely do this, this and this.” Second, there is a willingness to try and fail that was evident with this activity. For example, one manager describes his attempts to test new sales strategies as follows: “ [W]e needed to go out and find out how sound it was by stepping out and trying something new...after you know a couple weeks of trying that we finally said, you know, this is a horrible idea.” His attitude was, “Fail as fast as you can and so we would.” In fact, one co-founder attributed their ability to develop a “repeatable sales process” to the following: “I think our theme is: We screw a lot of things up and just learn from it. And the next time you screw up a little bit less and little bit less and a little bit less.” Third, feedback from all constituents involved in this activity was sought and valued. Input was discussed, debated and prioritized, externally through the public exchange and internally, through a separate exchange and “Top 10” lists departments prepare to

communicate what they hear from customers. This input shaped the total customer experience from onboarding to product enhancements.

The next two items represent boundaries around actions in this activity. In order to continue to build the customer base and ensure customer gains every month, sales reps agree to specific performance metrics upon hiring and are tracked against those metrics. “Sales is by far the most high churn arm of the organization,” but there are no surprises associated with those firings because it is based on results. In one way, performance management is also applied to customers. One co-founder explains: “Our clients love us because we bend over backwards for them, but by the same token we expect them to treat us well...so, if we ever have a client that is out of line or rude, they get transferred to me immediately so that I can fire them...they get one warning.” In addition, the venture has a policy of not changing the product to satisfy one customer at the expense of other customers. In other words, they do not try “to be all things to all people.” They are specific about their target market; don’t implement product enhancements unless it benefits “80% of our clients” and “[w]e never listen to prospects because they want everything.”

Outcome: According to one co-founder: “A repeatable customer acquisition process does not involve the founder or owner of the business.” As the other co-founder explained: “[I]t took us probably almost the end of 2008 before we felt really good about just having a repeatable sales process where we knew if we did x, y and z then we’ll get this number of customers...it just came with experience and trying new things.” As a result of setting “nice steady small milestones...there weren’t any near death experiences” and the company has been able to build a “predictable cash flow” with “no customer concentrations.” Client services has grown into specialized teams each focused on different aspects of the customer experience and the sales manager is credited with developing the sales process and mentoring many young sales reps to get them “to places they’d never expected to be at this point in their lives.

Path Building in Emerging Entrepreneurial Firms

6.12 Findings by Activity and Path Building Dimension: Prospect

Path Building Dimensions	Activity 1: Capital Acquisition	Activity 2: Development of Value Proposition	Activity 3: Talent Acquisition & Management	Activity 4: Product Development	Activity 5: Customer Acquisition
Initial Conditions	<ul style="list-style-type: none"> Late 2006 business owner begins search for people and capital to develop idea College friend with domain expertise engaged as a co-founder They estimate budget to run business for 12 months 	<ul style="list-style-type: none"> Business owner (initiating co-founder) trying to solve problem in existing business Co-founder (college friend with domain expertise) not convinced idea would work but believed in ability of initiating co-founder 	<ul style="list-style-type: none"> Initiating co-founder had experience in recruiting for startup ventures 	<ul style="list-style-type: none"> Business owner (initiating co-founder) trying to solve problem in existing company Business owner and college friend with domain expertise developed idea (first two co-founders) Idea transformed into a service and launched by a team of four co-founders 	<ul style="list-style-type: none"> Original founding team launched product but could not gain customers Market input used to quickly change direction of the business Founding team separated and the original two co-founders hired a lead developer to build the new product
Instigating Event	<ul style="list-style-type: none"> Late 2006 concept presented to angel investor/technology entrepreneur Angel investor agrees to fund most of estimated capital needed for first year 	<ul style="list-style-type: none"> Team of four co-founders and one angel investor put together to develop and launch original idea Original concept presented to potential customers 	<ul style="list-style-type: none"> Initiating co-founder started building the founding team by seeking domain experts A chance meeting of a college friend with domain expertise lead to development of the idea for the venture and a partnership 	<ul style="list-style-type: none"> Market feedback initiated conversion of original concept from service company to software company Company reorganized around first two co-founders Co-founders hired first employee, an engineer to develop technology 	<ul style="list-style-type: none"> The fourth hire for the reconstituted business was a sales rep to begin building the customer base in late 2007
Drivers	<ul style="list-style-type: none"> Outside capital as a way to accelerate growth Propensity for flexibility to experiment, fail and change quickly Limited capital, limits the extent of disasters Concern about the effects institutional funding would have on the emergent business 	<ul style="list-style-type: none"> Feedback from the market was key consideration Co-founders willing to fail fast and change direction if market did not accept concept 	<ul style="list-style-type: none"> Recruiting based on the near term needs of the venture in terms of domain expertise and activity being executed Recruiting based on maintenance of values and culture of the venture 	<ul style="list-style-type: none"> Continuous gathering of stakeholder feedback Modifications that benefit most clients Prioritization of modifications due to limited resources 	<ul style="list-style-type: none"> Cultivate awareness and demand for the emerging technology Identify the appropriate customers for this emerging technology Development of a repeatable customer acquisition process
Stakeholder Engagement	<ul style="list-style-type: none"> Initiating co-founder contacted potential investor he knew through local technology community Angel investor agreed to fund with minimal due diligence, based on character and reputation of initiating co-founder Original angel provided referral to technology expert for original founding team, as well as legal advice In 2009 pursued institutional funding through VC's initiating co-founder knew in local community, plus VC's around the country introduced through friends and other business relationships 	<ul style="list-style-type: none"> Initiating co-founder sought ideas and feedback from co-founders, local technology community and potential customers, including initiating co-founder's other business. Feedback from various stakeholders and potential stakeholders changed the direction of the business 	<ul style="list-style-type: none"> Reliance on both network and non-network sources for talent Internal referrals gradually became most important single source of talent Co-founders deliberately avoided establishing advisory board, choosing instead to seek guidance from mentors and peers through informal and formal forums Co-founders provided functional managers with autonomy to build and shape their teams Concerted effort to create a fun and relaxed environment where cross-pollination of teams is encouraged and mutual support is expected Clear expectations and communication around performance in sales function results in firings as well as exceptional performance 	<ul style="list-style-type: none"> Customers and employees from every department engaged in product development External and internal exchanges established to enable continuous input and polling of ideas Teams and department managers prioritize and negotiate product modifications 	<ul style="list-style-type: none"> A multiplicity of stakeholders engaged in a variety of ways Referrals from customers and online advertising and sponsorships provide leads to sales team who engages with prospects via telephone and online All departments contribute to a knowledge base to support sales effort Services department built around customer needs from onboarding, advocacy to separation Customers engaged in product development through direct contact and technology that captures feedback
Contingency Response	<ul style="list-style-type: none"> When within 90 days of formation, feedback on the original concept was not positive, the angel investor was bought out by initiating co-founder at a premium to provide the two remaining co-founders with flexibility to experiment and pursue other business options 	<ul style="list-style-type: none"> Market feedback indicated that value was not in the service but the technology that supported the service, so the original idea was scrapped. 4 person founding group disbanded, angel investor bought out and venture reorganized with two co-founders to sell technology 	<ul style="list-style-type: none"> Key hires attributed to luck and accident such as with the chance meeting of an college friend who had the right domain expertise, the hiring of the first employee for lead engineer who was a former intern in the initiating co-founder's other company and who happened to be graduating when the need arose, and the hiring of the fourth employee for sales rep who was an experienced sales professional who happened to be looking to relocate and was willing to take a pay cut Co-founders noticed a unique culture that had formed from the first group of employees and decided it was a culture worth preserving so they deliberately structured a hiring process around the key attributes of the culture 	<ul style="list-style-type: none"> Original product did not gain traction in the market, but market input and the willingness of the co-founders to fail fast enabled the product to be changed quickly and the timing allowed them to hire a former intern, who was graduating, as their lead developer 	<ul style="list-style-type: none"> Co-founders originally sought an entry level sales rep as their fourth hire, but when contacted by a candidate with 10 years experience seeking to relocate, they seized the opportunity to hire someone who could sell and help build the sales function The venture attempted to reach customer segments outside of their initial market and when those attempts failed they quickly defined and redirected efforts to their primary customer base
Scope of Action	<ul style="list-style-type: none"> Co-founders purposively built a network of funding sources and deliberately chose not to use outside funding Autonomy and agility to fail fast and change course as needed was preferred despite the challenge of limited resources Co-founders choose to be a small firm through slower growth over scaling rapidly to be a large firm 	<ul style="list-style-type: none"> Co-founders tested ideas in the market and gathered feedback from a variety of sources Co-founders reorganized ownership and founding team in response to feedback and change in direction 	<ul style="list-style-type: none"> Recruiting and management of talent began as informal processes that transformed to formal recruiting and performance management processes in an effort to perpetuate the positive aspects of the culture and positive growth of the venture Within structure processes, a degree of informality in policies has remained Recruitment of employees was incrementally and strategically in all functional areas Co-founders demonstrated the willingness and ability to downsize or dismantle the organization if the strategy was not effective or headcount could not be supported 	<ul style="list-style-type: none"> Originally controlled by two co-founders, activity eventually engaged a broad range of stakeholders, including customers and employees from all departments reflecting the co-founders willingness to experiment to address market needs As stakeholder engagement increased, structures were put in place to gather input and allow for polling, negotiation and prioritization of modifications Boundaries established, including only executing modifications that benefitted most clients and not incorporating input from prospects 	<ul style="list-style-type: none"> Co-founders provided sales and customer service managers with autonomy to build and shape their domains Actions reflect a willingness to experiment and incorporate the learning from those efforts Decision making values feedback from a variety of stakeholders, however needs of one customer are not valued above the needs of most of the customers and unprofessional customers are fired Structure and processes enable open communication, debate and negotiation within the venture Sales team is held to specific and rigorous performance targets that if not met result in firing
Outcome	<ul style="list-style-type: none"> Co-founders maintained control of decisions and growth Errors and mistakes were not catastrophic because less capital was at risk Created potential funding sources and demonstrated the ability to raise capital if needed 	<ul style="list-style-type: none"> Original value proposition not validated by market Input from market revealed different value in the concept Direction of business changed in response to market input in terms of both product offering and venture organization 	<ul style="list-style-type: none"> Internal referrals which are more reliable have become the most important source of new talent Culture has been maintained through a combination of a highly structure recruiting process and informal policies in a relaxed work environment Growth has been maintained through an aggressive performance management system that rewards exceptional performance and quickly fires those who do not meet targets Growth has also raised concerns that culture will be difficult to maintain in the future 	<ul style="list-style-type: none"> Stakeholder input changed the product from the original business concept Broadening stakeholder engagement resulted in structures and processes and boundaries around modifications 2011, the venture hired a product development manager specifically to manage and develop this activity 	<ul style="list-style-type: none"> A repeatable customer acquisition process was developed that is not dependent on the co-founders for leads Small steady milestones and effective sales and service processes have created a customer base that is not concentrated and generates a predictable cash flow Performance management and mentoring have enabled sales reps to attain levels of success they did not anticipate

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8 VITA

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